PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

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To: Portland Utility Board
Water Bureau Employees and Labor Leaders

Enclosed is the Portland Water Bureau's (PWB) Fiscal Year (FY) 2016-17 Capital Improvement Plan Annual Report (CIPAR). The purpose of this report is to provide information on the current status of major projects (those with a total budget of $500,000 or more) and an appendix of profiles for all projects.

Water Bureau spending in FY 2016-17 reflects its place as a utility providing water to a growing and changing city with final year-end expenditures of almost $60 millions. With a final revised capital budget of about $62 million, the bureau made major improvements in it Distribution and Transmission and Terminal Storage programs to provide short- and long-term benefits for water customers. Dozens of capital projects directly support requests for new development. Hundreds of projects improve the system to keep water flowing every minute of every day. The new Hanna Mason Pump Station became operational at the end of the fiscal year. Construction began on the Washington Park Reservoir 3 project to provide earthquake-proof water storage for Portland's west-side businesses, medical centers, and homes. The bureau moved closer to a securing a Design-Build contract for the Willamette River Crossing project to locate a seismically reinforced water pipe deep under the Willamette River.

In May of 2017, the bureau also received notice from the Oregon Health Authority that it would revoke the bureau's variance to the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) because monitoring found *Cryptosporidium* concentrations above the allowable threshold. At the end of FY 2016-17, the bureau was developing an approach to the LT2 treatment requirements that reflects its mission to protect public health and provide cost-effective long-term solutions to community needs.

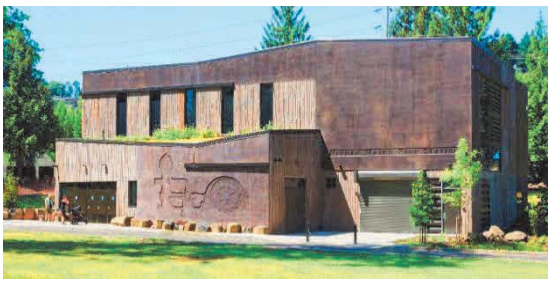
The report and appendix provide information on the expenditures by program and comparisons of projected budgeted amounts to actual spending. All project profiles display the scope, schedule, and budget, key identifying information, expenditures by fiscal year and by activity, a Gantt chart view of the schedule, the project location, and photos of current activities. The forecasts for future project expenditures are the basis of capital improvement planning for future years.

If you have any questions about this report, please contact the Water Bureau at 503-823-7589.

Teresa Elliott
Chief Engineer

PORTLAND WATER BUREAU






Capital Improvement Program Annual Report

Fiscal Year 2016–17

October 2017

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Contents

CIP Highlights

The Portland Water Bureau's (PWB) Fiscal Year (FY) 2016-17 Five-Year Capital Improvement Plan (CIP) included approximately $474 million in water system infrastructure needs for the five-year period beginning in FY 2016–17 (in FY 2016–17 dollars). For FY 2016–17, the one-year adopted budget allocation was nearly $83 million. The final revised budget was about $71 million and final expenditures were at about $62 million.

The Water Bureau spending in FY 2016-17 reflects its place as a utility providing water to a growing and changing city. Dozens of capital projects directly support requests for new water pipe or relocating pipe for other essential City services. Hundreds of individual projects improve the system to keep water flowing every minute of every day. The bureau's largest project, Washington Park Reservoir 3, will provide earthquake-proof water storage for Portland's west-side businesses, medical centers, and homes. The bureau also completed a major phase in a multi-year project to optimize the system to reduce lead in customers' plumbing systems.

Almost half of the $62 million spent in FY 2016–17 was for investments in the distribution system. This included projects to ensure reliability of the pipes, services, pump stations, meters, and valves that are essential to reliably providing water to customers. The Hannah Mason Pump Station, a major project to replace and relocate one of the bureau's oldest pump stations, became operational at the end of the fiscal year. The bureau also prepared for solicitation of a Design-Build firm for the Willamette River Pipe Crossing, a project to locate a seismically reinforced water pipe deep under the Willamette River.

More than a third of the $62 million (approximately $24 million) was spent in the Transmission and Terminal Storage Program. The majority of the funds were for the beginning phase of construction on the bureau's largest project, Washington Park Reservoir 3.

Investments for the Customer Service, Supply, Support, Regulatory Compliance and Water Quality, and Treatment programs made up the rest of the capital spending for the fiscal year. The major efforts include emergency response to a heavy storm in January 2017, compliance with federal and safety regulations for the Bull Run Watershed, technology to support the Customer Service Team and field communications, and a major study to assess the seismic readiness of Portland's water system.

Capital Programs

Capital program planning at the Water Bureau is a collaborative effort among CIP Planning, Asset Management, and Engineering Management teams. CIP and Asset Management staff conduct analyses of project costs, benefits, and timing. These analyses are provided to Engineering Management to support decision-making and project sequencing. CIP Planning staff also produce financial and project status reports and participate in management committees to oversee the delivery of capital projects.

The Water Bureau has seven major budget programs: Customer Service, Distribution, Regulatory Compliance and Water Quality, Supply, Support, Transmission and Terminal Storage, and Treatment. The primary drivers of the bureau's capital work have been ensuring the reliable functioning of the drinking water system, replacing assets that are at or near the end of their useful lives, achieving compliance with federal and state drinking water regulations, and supporting the continued growth and economic vitality of the city. This section provides a brief overview of each of the capital programs.

Customer Service Program

The focus of the Customer Service Program is customer contact, billing and collection, water conservation, and providing for the bureau's facilities and grounds. One of the goals of the Customer Service Program is to improve facility security and support emergency preparedness operations.

Distribution Program

The Distribution Program provides water to customers through the network of distribution mains and related facilities. The Distribution CIP Program ensures the reliable functioning of more than 2,200 miles of distribution mains as well as the pump stations, storage tanks, pressure-regulating stations, control valves, fire hydrants, drinking fountains, and customer service connections that deliver water. The Distribution Program also provides for the relocation of water pipes to accommodate projects of other public agencies and projects to support Portland's recent redevelopment surge.

Regulatory Compliance and Water Quality Program

The Regulatory Compliance and Water Quality Program provides for meeting federal and state standards for drinking water quality, water delivery operations, and meeting environmental standards related to the bureau's operations in the Bull Run Watershed and the Columbia South Shore Well Field. Federal standards include the source water treatment regulations in the Long Term 2 Enhanced Surface Water Treatment Rule (LT2 rule) as administered by the State of Oregon Health Authority (OHA). In 2012, the OHA issued the bureau a variance from the LT2 treatment requirement for source water from the Bull Run Watershed. The variance required the bureau to monitor Bull Run source water for *Cryptosporidium*, maintain all legal land-use protections, and monitor and manage potential sources of contamination. In early 2017, the Water Bureau's monitoring found *Cryptosporidium* concentrations above the threshold allowable in the variance. In May 2017, the OHA notified the Water Bureau that it

would revoke the variance and required that the Water Bureau provide for conventional compliance with the LT2 rule, through treatment.

The bureau's compliance with the Clean Water Act and the Endangered Species Act (ESA) also includes capital projects described in the Bull Run Habitat Conservation Plan (HCP), a regulatory agreement with the National Marine Fisheries Service and the Oregon Department of Environmental Quality. HCP compliance projects include negotiating conservation easements next to selected streams and other projects to improve habitat for ESA-listed fish.

Supply Program

The focus of the Supply Program is maintaining the reliability of the water supply through effective management of the water supply elements. The Supply Program includes both the Bull Run Watershed and the Columbia South Shore Well Field (CSSWF) backup supply. Projects in the Bull Run Watershed address the proper functioning of watershed assets, such as the dams, and the roads that provide access. Projects in the well field ensure the reliable functioning of the groundwater backup supply. The five-year CIP does not include a major expansion of the well field beyond its current capacity.

Support Program

The Support Program includes bureau-wide work supporting programs in areas such as finance, data management and technology solutions, human resources, project planning, and master planning. Master planning identifies the need for, and timing of, system improvements or replacements and the most effective strategies for investing in bureau assets. PWB uses asset management practices—such as evaluations of risk, life-cycle costs, and benefit-cost ratios—in conjunction with master planning to identify strategies for repairing, rehabilitating, or replacing system elements.

Transmission and Terminal Storage Program

The Transmission and Terminal Storage Program provides for conveying water from the supply facilities to the retail distribution system and service delivery points for wholesale customers. Projects in this program include the major regulatory compliance and seismic resilience project at Washington Park and ensuring the reliability of the large conduits and transmission mains.

Treatment

The Treatment Program provides for the application of chlorine, ammonia, and sodium hydroxide, as well as regulatory and process-control monitoring for water treatment. The Treatment Program is a key part of the bureau's responsibility to meet or exceed the federal and state requirements for a water system utilizing unfiltered surface water and groundwater sources. At the end of FY 2016-17, the bureau was working with stakeholders to develop its approach to the LT2 treatment requirements.

Major Projects by Program

Total CIP expenditures were about $62 million of the $71 million total revised bureau CIP budget for Fiscal Year 2016–17. Table 1 on page 12 is the Capital Program Status Report from the FY 2016–17 fall budget monitoring process. Table 2 on page 13 shows the summary by program and subprogram of the revised CIP budget to actual expenditures for the projects profiled in this report and appendix. The differences in the totals for Tables 1 and 2 are the result of using different data sources and parameter selections. Table 1 does not include the costs for fleet vehicle purchases and shows total expenditures including reductions for project costs reimbursed by other City bureaus. Table 2 is more representative of all the costs that the Water Bureau is responsible for and does not include reductions in project totals due to payments received from other sources. Table 3 shows ongoing expenditures and other project details that are not profiled.

Customer Service

The Customer Service Program included expenditures for repairs during a heavy storm in January 2017 that caused 92 main breaks in 13 days (Figure 1). The emergency repairs were part of the Customer Service CIP Program.

Figure 1. Water Bureau staff worked around the clock during the second of two heavy winter storms. During a 13-day period, crews responded to 92 broken water mains, which is half the number of main breaks in a typical year.

Distribution

In the five-year CIP plan, approximately $218 million—approximately 46 percent of the total adopted five-year CIP of $474 million—is dedicated to the Distribution Program, which includes projects in seven water subprogram areas: distribution mains, services, meters, hydrants, valves, pump stations and tanks, and field support. Approximately $29.5 million was spent in the Distribution Program during FY 2016–17.

Distribution-system projects were selected through a combination of recommendations from master plans and the Asset Management Program. Master planning identifies whole-system trends and deficiencies and asset management applies the lens of risk reduction and benefit-to-cost analyses. In FY 2016-17, the major distribution projects included a mix of those to improve system reliability and operations, reduce risks, and accommodate Portland's renewed growth. Notable projects in FY 2015–16 included the following:

Willamette River Pipe Crossing ($57 million)—To improve seismic reliability and provide reliable transmission between large east-side reservoirs and west-side retail and wholesale customers. The project is in the design phase.

Fulton/Hannah Mason Pump Station ($18.6 million)—To modernize, replace, and relocate a west-side pump station that was past the end of its useful life (Figure 2). The project adds operational flexibility for west-side pumping. Construction on the project was nearly complete at the end of the fiscal year.

Willamette Boulevard Bridge Main Replacement ($4.5 million)—To increase capacity, strengthen the primary supply to North Portland, and reduce risks to the railroad beneath the bridge. The project was in the design phase.

Penridge Mains ($2.5 million)— This project is part of a suite of projects to take the Penridge Tank out of service, replace about 8,000 feet of water mains, replace the aging Greenleaf Pump Station under a separate project, and improve system capacity for emergencies. The project started the design phase.

Figure 2. The new Hannah Mason Pump Station in Willamette Park replaces the Fulton Pump Station and provides resilience to natural hazards, system reliability, and improved operating efficiency.

More than five miles of new and replacement distribution mains and associated facilities were installed during FY 2016–17 to ensure reliability of the pipes, services, meters, hydrants, and valves that deliver water to customers. The bureau's major focus in the distribution mains subprogram was keeping pace with ongoing deterioration. In recent years, however, requests for mains to serve new development has been a significant part of the bureau's pipe work. The Distribution Program included replacement of obsolete equipment such as inoperable hydrants (Figure 3) and service lines as well as projects, such the Outer Powell Transportation Safety Project, to relocate water lines to accommodate other agencies' transportation projects.

Figure 3. Water Bureau workers installing a hydrant at Southwest Bancroft near Terwilliger Boulevard.

Regulatory Compliance and Water Quality

The bureau invested approximately $1.6 million in the Regulatory Compliance and Water Quality Program. Major capital projects include work to ensure compliance with the Endangered Species and Clean Water Acts and a remodel of part of the bureau's existing Water Quality Laboratory. The new lab equipment gives the bureau the capability of conducting in-house analyses of *Cryptosporidium* in water.

Supply

Nearly $3.4 million was invested for improvements to facilities in the Bull Run Watershed and the Columbia South Shore Well Field (CSSWF). Approximately half of the funds were spent in the Bull Run Watershed on continued efforts to bring access roads up to current safety standards. A major project to improve the Microwave Communications System—an essential component of monitoring and controlling water-supply operations—began construction during the fiscal year.

Support

The bureau funded approximately $2 million of CIP work in the Support Program, which includes master system planning as well as technology improvements. Master planning includes asset management studies to help guide the selection of major capital projects. During FY 2016–17, PWB completed a major study to assess seismic risk to the system and began a multi-year master plan for the water-supply system.

Transmission and Terminal Storage

System investments in the Transmission and Terminal Storage program were approximately $24 million in FY 2016–17. The majority of the funding (approximately $21 million) was for the kickoff of construction on the Washington Park Reservoir 3 Project, which includes large-scale excavation and strengthening of the site (Figures 4 and 5). The project maintains compliance

with the drinking water reservoir requirements of the LT2 rule, replaces one of the oldest elements in the water system, and retrofits the Washington Park site to withstand shaking from an earthquake and movement from a landslide. This complex, multi-stage project is slated to be completed by 2024.

Figures 4 and 5. Construction on Washington Park Reservoir 3 kicked off with major excavation and strengthening of the site.

Other projects in the Transmission and Terminal storage budget included the Tabor Reservoir Adjustments and two projects for the conduits that carry water from the Bull Run Watershed. Project work at Mount Tabor included installing a large transmission main to bypass the Mount Tabor Reservoirs, which are no longer connected to the drinking water system. Two conduit projects, Gresham Conduit 2 Trestle Upgrades and Conduit 3 Internal Inspection, are part of a systematic effort to assess and strengthen Portland's largest water pipes.

Treatment

In March 2017, the bureau began a project to design and construct a $20 million Corrosion Control Treatment Facility at the Lusted Hill Treatment Facility to maintain compliance with the federal Lead and Copper Rule. In May 2017, the OHA notified the Water Bureau that it would revoke variance from the treatment requirements for the LT2 rule and required the bureau to develop a plan for conventional compliance through treatment. The $1.6 million Headworks Generator Improvements Project was cancelled due to the potential for a change in the power requirements at Headworks. In June 2017, the Water Bureau and its stakeholders, including the Portland City Council, were evaluating treatment alternatives.

Summary Tables

Table 1. Water Bureau Capital Program Status Report[a,b]

	FY 2016–17					FY 2017–18				
				Variance[c]					Variance[d]	
CIP Program	Adopted Budget	Revised Budget	Year-End Actuals	Amount	%	Adopted Budget	Fall BMP Revised Budget	Year-to-Date Actuals	Amount	%
Customer Service	$66,000	$640,000	$513,474	($126,526)	(20%)	$418,000	$418,000	$27,583	0	0%
Distribution	$37,704,000	$31,474,000	$27,545,729	($3,928,271)	(12%)	$38,462,000	$38,462,000	$992,045	0	0%
Regulatory Compliance/ Water Quality	$2,364,000	$1,964,000	$1,573,659	($390,341)	(20%)	$2,300,000	$2,300,000	$179,273	0	0%
Supply	$4,769,000	$3,451,000	$3,383,039	($67,961)	(2%)	$5,781,000	$5,781,000	($36,828)	0	0%
Support	$2,278,000	$2,328,000	$2,084,556	($243,444)	(10%)	$2,900,000	$2,900,000	($1,987)	0	0%
Transmission/ Terminal Storage	$35,269,000	$30,569,000	$24,190,026	($6,378,974)	(21%)	$57,989,440	$57,989,440	($1,594,226)	0	0%
Treatment	$440,000	$640,000	$641,062	$1,062	0%	$1,370,000	$1,370,000	$13,263	0	0%
Total	**$82,890,000**	**$71,066,000**	**$59,931,547**	**($11,134,453)**	(16%)	**$109,220,440**	**$109,220,440**	**($420,877)**	**0**	**0%**

[a]Does not include fleet vehicles.

[b]Total is net of costs transferred to other bureaus for utility relocation cost sharing.

[c]Prior-year (FY 2015–16) variances compare Year-End Actuals to Revised Budget.

[d]Current-year (FY 2016–17) variances compare Revised Budget to Adopted Budget.

Prior-Year (FY 2016–17) Variance Description

Customer Service: Final contract approval for the utility billing system upgrade was delayed until FY 2017-18.

Distribution: The reported expenses are under reported due to the inclusion of about $449,000 in interagency revenue and the exclusion of about $1,500,000 of fleet vehicle purchases. With noted exceptions, total Distribution Program expenses are $29.5 million and the variance is -6.3 percent. Total CIP expenditures are $ 61.9 million for a variance of -12.9 percent.

Regulatory Compliance and Water Quality: Costs to obtain Habitat Conservation Plan easements were lower than budget. Construction survey for the large wood projects was delayed to coincide with the start of construction in July, which is in FY 2017-18. Completion of the Water Quality Lab remodel was delayed slightly, but overall costs are now expected to be less than estimated.

Support: Improvements to the Water Control Center and Sandy River Fiber cost less than estimated. Start of the Mt. Tabor Fence replacement construction was delayed about three months into FY 2017-18.

Transmission/Terminal Storage: Washington Park Construction was delayed due to execution of the construction contract and issuance of the building permits.

In Total: Expensed work included.

Table 2. FY 2015–16 CIP Budget to Expenses, July 2016 Through June 2017

Program	Water Program	Water Subprogram	Budget	Expenses[a]
CUSTOMER SERVICE	CUSTOMER SERVICE		$574,000	$122,162
	SECURITY/EMERGENCY MG		$66,000	$391,313
		Customer Service Program Total	**$640,000**	**$513,474**
DISTRIBUTION	DISTRIBUTION MAINS		$15,190,000	$11,808,822
	FIELD SUPPORT		$2,505,000	$2,257,141
	HYDRANTS		$1,369,000	$1,761,872
	METERS		$1,139,000	$606,771
	PUMP STATIONS/TANKS		$5,996,000	$5,963,059
	SERVICES		$5,275,000	$7,096,351
		Distribution Program Total	**$31,474,000**	**$29,494,017**
REGULATORY COMPLIANCE & WATER QUALITY	REG COMP & WQ		$1,964,000	$1,573,659
		Regulatory Compliance and Water Quality Total	**$1,964,000**	**$1,573,659**
SUPPLY	BULL RUN WATERSHED		$2,811,000	$2,697,290
	GROUNDWATER		$640,000	$685,750
		Supply Total	**$3,451,000**	**$3,383,039**
SUPPORT	BUREAU SUPPORT		$550,000	$439,771
	PLANNING		$1,778,000	$1,644,457
		Support Total	**$2,328,000**	**$2,084,229**
TRANSMISSION AND TERMINAL STORAGE	CONDUITS/TRANSMISSION		$1,259,000	$1,560,905
	TERMINAL RESERVOIRS		$29,310,000	$22,629,121
		Transmission and Terminal Storage Total	**$30,569,000**	**$24,190,026**
TREATMENT	WATER TREATMENT PROG		$640,000	$641,062
		Treatment Total	**$640,000**	**$641,062**
		Grand Totals	**$71,066,000**	**$61,879,507**

[a]Project totals have been rounded to nearest whole-dollar amount.

Table 3. FY 2016–17 Ongoing Expenditures

SAP	Name	FY 2016–17 Actual (Year 1)	FY 2017–18 Plan (Year 2)	FY 2018-19 Plan (Year 3)	FY 2019-20 Plan (Year 4)	FY 2020-21 Plan (Year 5)	FY 2021–22 Plan (Year 6)
WBASPL	**Planning**	$1,644,457	$2,900,000	$2,900,000	$2,900,000	$2,900,000	$2,900,000
WBDIFS	**Field Support**	$2,257,141	$4,000,000	$4,000,000	$4,000,000	$4,000,000	$4,000,000
WBDIHY	**Hydrants**	$1,761,872	$1,400,000	$1,400,000	$1,400,000	$1,400,000	$1,400,000
WBDIME	**Meters**	$606,771	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000
WBDISV	**Services**	$5,963,059	$6,000,000	$6,000,000	$6,000,000	$6,000,000	$6,000,000
WBRCRC	**ESA Compliance**[a]	$1,573,659	$2,279,000	$2,080,000	$2,080,000	$ 500,000	$ 500,000

[a]ESA is the Endangered Species Act of 1973

Glossary for Project Profiles

Profile Element	Definition and Comments
Part A. Scope	
Original Description/Purpose:	Description of the project scope at the start of the project. What is the project? This text is usually unchanged from the original Project Action Form approved at the start of the project. During design and construction, factors such as site conditions, constructability, and value engineering may change the scope.
Rationale: Plans/Studies & Specifics	This text describes the reason for the project. Some projects have had plans, studies, analyses, or Council authorization. Some specifics from those references to justify the project approval. The text describes "why" we have started the project.
Major changes since start:	This text briefly highlights approved scope, schedule, and/or budget changes, life-to-date. This can be blank if there have been no changes.
Other info/ Coordination:	Includes information such as agency coordination, grant funding, constraints or requirements on the project delivery.
Part B. Schedule	
Initial mention:	When this project was first mentioned (Project Action Form, memo, white paper, master plans).
Initial planned comp:	This was the estimated completion date when the project was first mentioned, or when the first project number was issued.
Current planned comp:	This is the current completion date as known in September 2016. This is the date for end of project as shown in the Gantt chart. This is the project planned completion which is a few months after construction phase is complete. Closeout phase, for some projects can take much longer due to interagency billing or for other reasons. Closeout phase does not include warranty period. Projects can be completed before the planned completion date.
Part C. Cost Plan	
Initial total cost est:	The initial cost estimate is the same as the Original Cost Estimate in the Budget document for major projects. For non-major projects, the initial cost estimate occurs when the project is initiated or in a Basis of Design Report, initial Memorandum of Understanding, or in other significant documents.
FY 16-17 plan on 10/2016:	This is the planned expenditure as of October 2016.
FY 16-17 plan on 5/2017:	This is the planned expenditure as of May 2017.
Overall rate impact %:	Calculated % for CIP. Formula: Project total/$14,000,000.
Debt service, FY 17-18 est:	Estimated annual debt service for project. Calculation by CIP Planning based on funding 80% of the project, 25-year term at 5%.

Profile Element	Definition and Comments
Lifecycle cost est:	Each project is classified as one of 3 categories: Likely increase, Likely decrease, or No material change. Likely increase means the asset's operations and maintenance costs will likely increase. This is the case when it is a new asset such as a new building. Likely decrease means the asset's operations and maintenance costs will likely decrease (e.g., more efficient motors, abandoned mains). No material change is often when the asset has just been replaced or some aspects of operations and maintenance have gone up while others have gone down.
Part D. Identification	
SAP #:	SAP capital project number for the project.
Program:	City budget program assignment for the project.
Subprogram:	Water subprogram category assignment for the project.
Nearest address:	Short form of address (3353 SE Division) or the nearest intersection (SE Division & 34th Ave). Occasionally, for security reasons, the address or the map is ambiguous.
Part E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)	
Project total (actual + all FY plans)	Sum of project total expended to date and also all planned costs from FY 2017-18 onwards. Project contingency is included in the phase estimates.
Past FY Actual (life to 6/30/2017)	Project total actual expenses from the start of the project until June 30, 2017. The actual for FY 2016-17 is included in this figure. The sum amount in this column has been rounded up.
FY 17-18 (FY0 Plan):	Project plan for FY 2017-18 as known in September 2017 when we collect data for this annual report. Project contingency is included in the phase estimates.
FY 18-19 (FY1 Plan):	Project plan for FY 2018-19 as known in September 2017 when we collect data for this annual report. Project contingency is included in the phase estimates.
FY 19-20 (FY2 Plan):	Project plan for FY 2019-20 as known in September 2017 when we collect data for this annual report. Project contingency is included in the phase estimates.
FY 20-21 (FY3 Plan):	Project plan for FY 2020-21 as known in September 2017 when we collect data for this annual report. Project contingency is included in the phase estimates.
FY 21-22 (FY4 Plan):	Plan for FY 2021-22 as known in September 2017 when we collect data for this annual report. Project contingency is included in the phase estimates.
FY 22-23 (FY5 Plan):	Plan for FY 2022-23 as known in September 2017 when we collect data for this annual report. Project contingency is included in the phase estimates.
All following FY Plans:	Sum of FY 2023-24 and FYs further out as known in September 2017 when we collect data for this annual report. Project contingency is included in the phase estimates.

Acronyms and Abbreviations Used in Project Profiles

AMP	asset management plan
AWWA	American Water Works Association
BDR	Basis of Design Report
BES	[Portland] Bureau of Environmental Services
BOM	[Portland] Bureau of Maintenance
BTS	[Portland] Bureau of Technology Services
CADD	Computer Aided Drafting and Design
CI	cast iron
CLEM	Consequence and Likelihood Evaluation Matrix
DI	ductile iron
DSMP	Distribution System Master Plan
EPA	U.S. Environmental Protection Agency
GIS	geographic information system
GW	groundwater
HDPE	high-density polyethylene
HGL	hydraulic grade line
kV	kilovolt
LAP	Likelihood Assessment Process
LEED	Leadership in Energy & Environmental Design
LID	local improvement district
LT2	Long Term 2 Enhanced Surface Water Treatment Rule
MG	million gallons
MHz	megahertz
NTP	Notice to Proceed
O&M	operations and maintenance
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
OHA	Oregon Health Authority
OPS	Operations
ORS	Oregon Revised Statute
OWAM	Oracle work order management
PBOT	Portland Bureau of Transportation
PCR	Project Concept Report
PGE	Portland General Electric
PS	pump station
PUD	public or people's utility district
PVR	Project Validation Report
PWB	Portland Water Bureau
ROW	right of way
RTU	remote telemetry unit
SCADA	system control and data acquisition
SIP	Safety Investment Program
TVWD	Tualatin Valley Water District
UIC	underground injection control
UPRR	Union Pacific Railroad
USGS	U.S. Geological Survey
VOIP	voice-over Internet protocol
VSA	Vernon-Sabin-Alameda sewer project
VSP	vitrified sewer pipe
WL	water line
WO	water outage

Major Project Profiles

Program- Water Program	SAP	Project	Total	Phase	Page
Customer Service - Customer Services	W02178	Cayenta Upgrade	$892,000	040 Construction	19
Distribution - Distribution Mains	W01547	Sellwood Bridge	$823,000	050 Closeout	21
Distribution - Distribution Mains	W01590	Willamette River Pipe Crossing	$57,000,000	030 Design	23
Distribution - Distribution Mains	W01665	SW Nevada E of Macadam	$794,000	055 Closeout Warranty	25
Distribution - Distribution Mains	W01682	Cornell Road Services - Macleay Park	$1,302,000	040 Construction	27
Distribution - Distribution Mains	W01841	SW Bancroft Terr near Terwilliger Blvd	$652,000	055 Closeout Warranty	29
Distribution - Distribution Mains	W01842	N Jantzen Ave west of Pavilion	$1,283,000	030 Design	31
Distribution - Distribution Mains	W01865	SW Flower Terrace at Dosch	$550,000	055 Closeout Warranty	33
Distribution - Distribution Mains	W01880	SW Vista Ave from Spring St to Laurel St	$961,000	040 Construction	35
Distribution - Distribution Mains	W01924	Outer Powell Transportation Safety	$1,974,000	020 Planning	37
Distribution - Distribution Mains	W02004	Penridge Mains	$2,530,000	030 Design	39
Distribution - Distribution Mains	W02005	Willamette Blvd Bridge Main Replacement	$4,500,000	030 Design	41
Distribution - Distribution Mains	W02073	SW Boones Ferry Rd at SW Arnold St Bridge	$560,000	030 Design	43
Distribution - Distribution Mains	W02077	SE 20th Ave Oak St north of SE Pine St	$454,000	040 Construction	45
Distribution - Distribution Mains	W02100	Humboldt Sewer Repair	$326,000	040 Construction	47
Distribution - Distribution Mains	W02115	NE 47th Ave and Columbia Blvd LID	$1,400,000	030 Design	49
Distribution - Distribution Mains	W02134	Columbia Slough Outfall 104b	$936,000	030 Design	51
Distribution - Distribution Mains	W02192	NE Wheeler Basin Relocations	$832,000	030 Design	53
Distribution - Field Support	W01400	Interstate Facility Rehabilitation	$49,182,000	055 Closeout Warranty	55
Distribution - Pump Stations Tanks	W01358	Fulton Pump Station Improvements	$18,646,000	050 Closeout	57
Distribution - Pump Stations Tanks	W01446	Greenleaf Pump Station	$2,587,000	040 Construction	59
Distribution - Pump Stations Tanks	W01757	Tabor PS Improvements	$550,000	040 Construction	61
Distribution - Pump Stations Tanks	W01848	Council Crest Tank Roof Replacement	$1,309,000	030 Design	63
Reg Comp - Water Quality Reg Comp	W01836	Water Quality Lab Remodel	$450,000	040 Construction	65
Supply - Bull Run Watershed	W01825	Road 10 MP 4.6 - 6.2	$827,000	055 Closeout Warranty	67
Supply - Bull Run Watershed	W01826	Road 10 MP 3.0 - 4.6	$1,261,000	055 Closeout Warranty	69
Supply - Bull Run Watershed	W01874	Road 10R MP 28.77 - 31.85	$2,100,000	030 Design	71
Supply - Bull Run Watershed	W01875	Road 10H MP 10.95 - 12.56	$1,006,000	030 Design	73
Supply - Bull Run Watershed	W02001	Dam 1 Needle Valve Replacement	$3,260,000	030 Design	75
Supply - Bull Run Watershed	W02003	Headworks Septic System Replacement	$554,000	040 Construction	77
Supply - Bull Run Watershed	W02021	Microwave Communications System	$2,214,000	040 Construction	79
Supply - Groundwater	W01371	Groundwater Electrical Supply Improvements	$1,611,000	040 Construction	81
Transmission & Terminal Storage - Conduits Trans Mains	W01489	Rockwood PUD Meter Vault	$562,000	030 Design	83
Transmission & Terminal Storage - Conduits Trans Mains	W02006	Gresham Conduit 2 Trestle Upgrades	$1,306,000	030 Design	85
Transmission & Terminal Storage - Conduits Trans Mains	W02057	Conduit 3 Internal Inspection	$1,763,000	040 Construction	87
Transmission & Terminal Storage - Conduits Trans Mains	W02209	Conduit 2 Internal Inspection	$1,788,000	030 Design	89
Transmission & Terminal Storage - Terminal Reservoirs	W01402	Washington Park Reservoir 3	$190,000,000	040 Construction	91
Transmission & Terminal Storage - Terminal Reservoirs	W01524	Tabor Reservoir Adjustments	$7,012,000	040 Construction	93
Treatment - Treatment	W01860	Headworks Generator Improvements - cancelled	$490,000	059 Cancelled	95
Treatment - Treatment	W02002	Chlorine Scrubber Replacement - cancelled	$71,000	059 Cancelled	97

Cayenta Upgrade

A. Scope	
Original Description / Purpose:	This project will upgrade the software version of Cayenta Utilities from 7.5.3.18 to 7.9, which is a major software upgrade that moves us to Oracle 12c. This includes improved functionality within the software and customer self-service website for customers and upgrading to Windows Server 2012 R2.
Rationale: Plans/Studies & Specifics	Moving to Oracle version 12c will allow us to continue to be supported without an additional surcharge of 22%. We also need to be Windows 10 compliant, which is not possible in our current version.
Major changes since start:	Aug 2017: contracting delay and cost will shift to FY17-18.
Other info / Coordination:	The Revenue Bureau will complete this work. BTS has advised that the Data Center move will have top priority, therefore it could impact this project. The project is heavily dependent on the Revenue Bureau to complete the project. Portland building move could impact the Water Bureau training schedule and ability to go-live.

B. Schedule	
Initial mention:	February 2017
Initial planned comp:	February 2018
Current planned comp:	2/5/2018

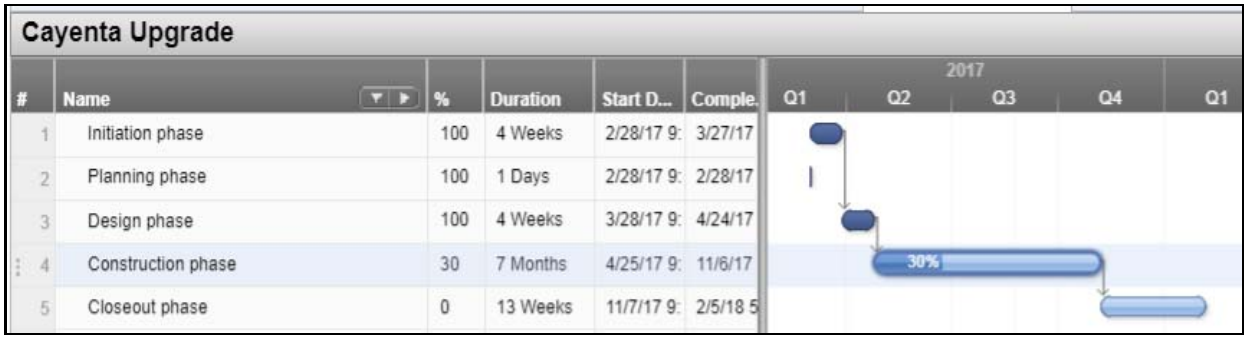
C. Cost Plan	
Initial total cost est:	$892,000
FY 16-17 plan on 10/2016:	$574,000
FY 16-17 plan on 5/2017:	$574,000
Overall rate impact %:	0.064
Debt service, FY 16-17 est:	$48,221
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02178
Program:	Customer Service
Subprogram:	Customer Services
Nearest Address:	Citywide

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$0	$0		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$891,162	$122,162		$769,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$892,000	$122,162		$769,000	$0	$0	$0	$0	$0	$0

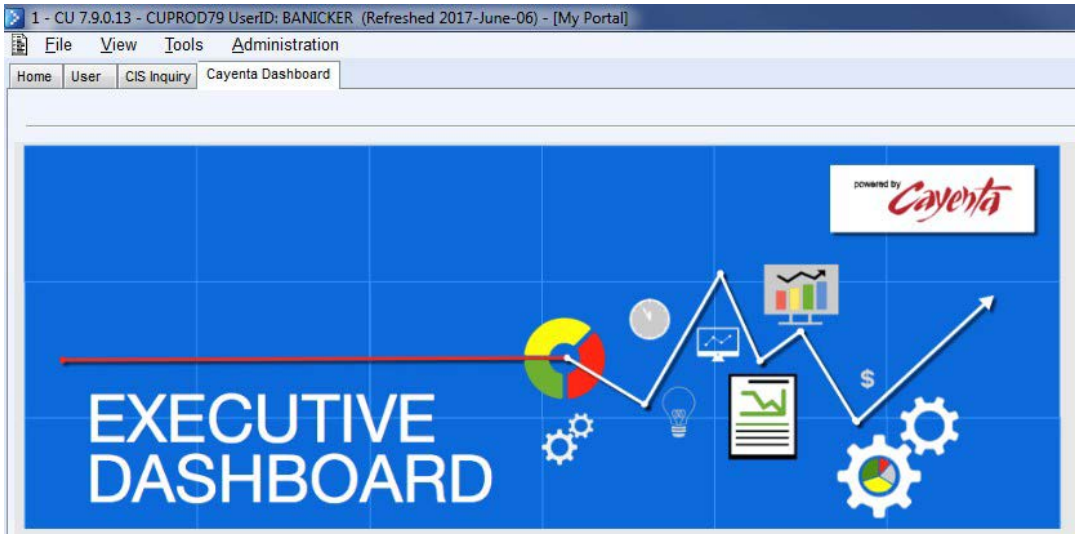
No Map for This Project



040 Construction

Major Project Continuing

W02178 Cayenta Upgrade



Sellwood Bridge

A. Scope	
Original Description / Purpose:	This project was constructed in two parts to accommodate bridge work schedule. Part 1 work installed 825 feet of 16 inch ductile iron pipe, 2 hydrants, and 1 service. Part 2 work installed 1,071 feet of 36 inch steel pipe, 65 feet of 30 inch steel pipe, one 36 inch valve, one 30 inch valve, one 30 inch ultrasonic flow meter in a dedicated vault, and 65 feet of 54 inch steel casing where the pipe passes through a railroad right of way. Cathodic protection was also added to the steel pipe. The work is part of Multnomah County's Sellwood Bridge replacement project. The project location is the west and east side landing areas for the bridge. Added irrigation service and relocation of domestic and fire service.
Rationale: Plans/Studies & Specifics	Multnomah County/PBOT request.
Major changes since start:	April 2013: scope, cost and schedule added due to county request to relocate additional mains and review various plans. Mar 2014: contractor delay caused cost increase and longer schedule. Sept 2014: delay and cost increase to match county schedule. June 2015: Reduced closeout phase and increased construction phase time while waiting for PBOT IGA. March 2016: additional scope requested by County added cost and delay. Sept 2017: project extending into FY17-18 for easement and closeout work.
Other info / Coordination:	Multnomah County will reimburse PWB for the work and complete $5M of water relocation at their cost. The total project cost for water is $6M.

B. Schedule	
Initial mention:	12/1/2009
Initial planned comp:	3/16/2015
Current planned comp:	11/17/2017

C. Cost Plan	
Initial total cost est:	$410,000
FY 16-17 plan on 10/2016:	$0
FY 16-17 plan on 5/2017:	$15,000
Overall rate impact %:	0.059
Debt service, FY 16-17 est:	$44,491
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01547
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Macadam Ave & Sellwood Bridge

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$19,577	$19,577		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$361,042	$361,042		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$442,216	$412,216		$30,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$823,000	$792,835		$30,000	$0	$0	$0	$0	$0	$0

050 Closeout

Major Project Completed

W01547 Sellwood Bridge

Willamette River Pipe Crossing

A. Scope	
Original Description / Purpose:	This project will build a large pipe crossing of the Willamette River. Existing pipelines across the Willamette River do not meet current seismic code. This project will add a new pipeline built to the current seismic code and will provide a reliable transmission link between Powell Butte and the service areas west of the Willamette River, including downtown and the storage reservoirs at Washington Park.
Rationale: Plans/Studies & Specifics	The project reduces the risk of a major water supply outage in the service areas west of the Willamette River, including downtown and the storage reservoirs at Washington Park. It includes construction of a new seismically strengthened river crossing to replace the first one of potentially two Willamette River crossings, and new transmission piping on both sides of the Willamette.
Major changes since start:	2011: schedule changed to complete geotech and acquire land before design. 2012: project schedule changed to reflect funding availability and allow earlier decision on alignment. 8/14: schedule and multiyear cost plan change for advance approval of alternative procurement. Aug 2015: schedule changes due to management considerations. March 2016: schedule change due to delays in Council approval.
Other info / Coordination:	Schedule overlap in design and construction is due to design-build procurement.

B. Schedule	
Initial mention:	6/1/2007
Initial planned comp:	June 2018
Current planned comp:	3/19/2020

C. Cost Plan	
Initial total cost est:	$57,000,000
FY 16-17 plan on 10/2016:	$1,900,000
FY 16-17 plan on 5/2017:	$1,900,000
Overall rate impact %:	4.071
Debt service, FY 16-17 est:	$3,081,364
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01590
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	1500 E/ SW HARBOR WAY

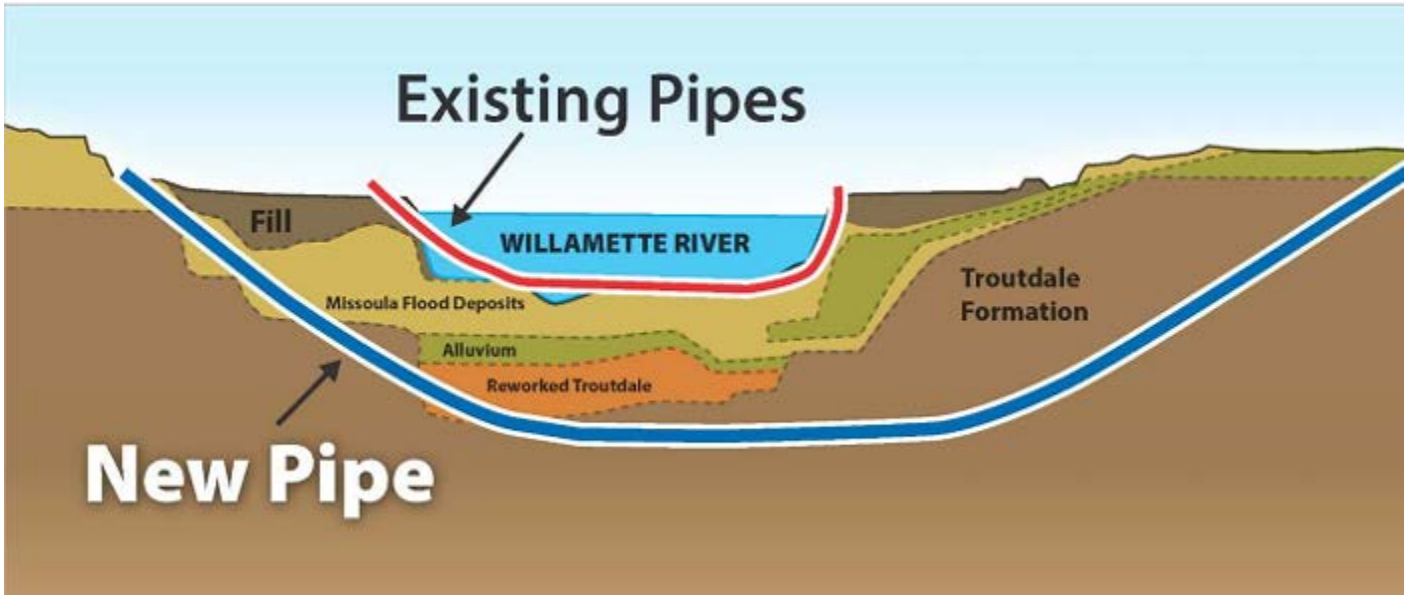
E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

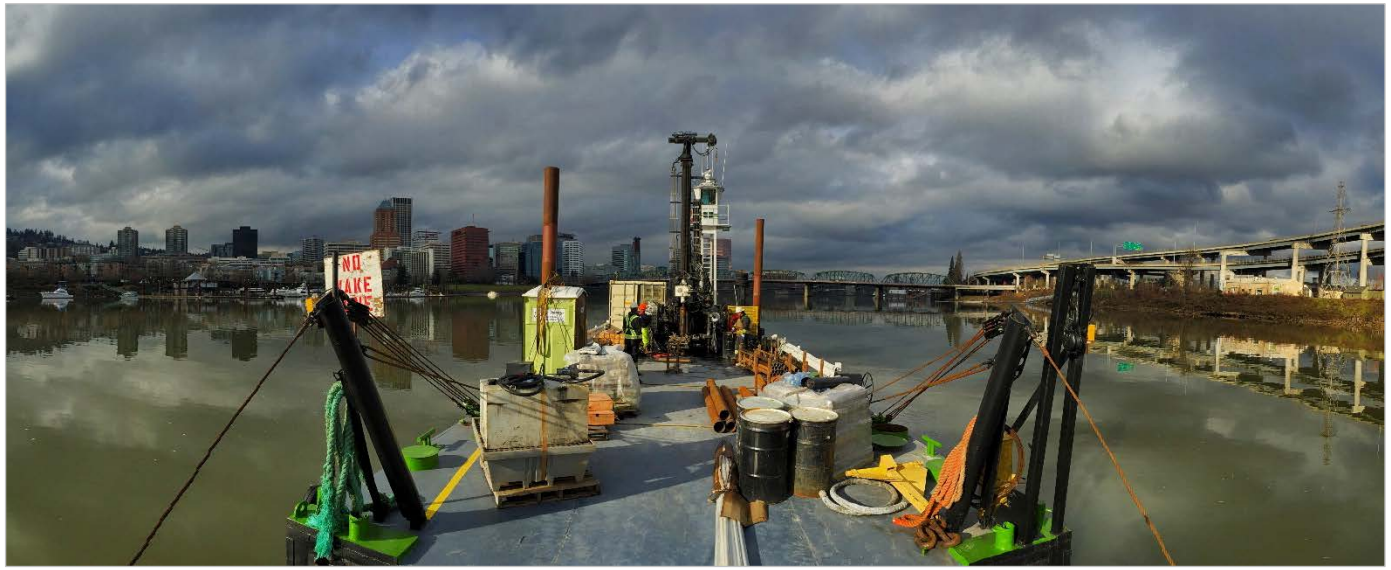
	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$72,617	$72,617		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$9,701,027	$2,301,027		$6,600,000	$800,000	$0	$0	$0	$0	$0
Construction & Land	$47,226,047	$6,047		$0	$37,800,000	$9,420,000	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$57,000,000	$2,379,690		$6,600,000	$38,600,000	$9,420,000	$0	$0	$0	$0

030 Design

Major Project Continuing

W01590 Willamette River Pipe Crossing





SW Nevada E of Macadam

A. Scope	
Original Description / Purpose:	The existing 12 inch steel main is approaching the end of its useful life and must be replaced before the suction and discharge piping is installed for the Fulton PS Replacement project. Scope change of 35 feet of 16 inch DI main will also be installed. Project will also abandon 10 feet of 20 inch cast iron and 25 feet of 16 inch cast iron and one 16 inch horizontal gate valve.
Rationale: Plans/Studies & Specifics	The existing 12 inch steel main is approaching the end of its useful life and must be replaced before the suction and discharge piping is installed for the Fulton PS Replacement project.
Major changes since start:	8/2013: schedule and cost increase due to more complete scope of work. 9/2014: schedule and cost plan change to match Fulton Pump Station project but total remains the same. 3/2015: cost, scope and schedule change to match Fulton Pump Station construction; no new increase.
Other info / Coordination:	

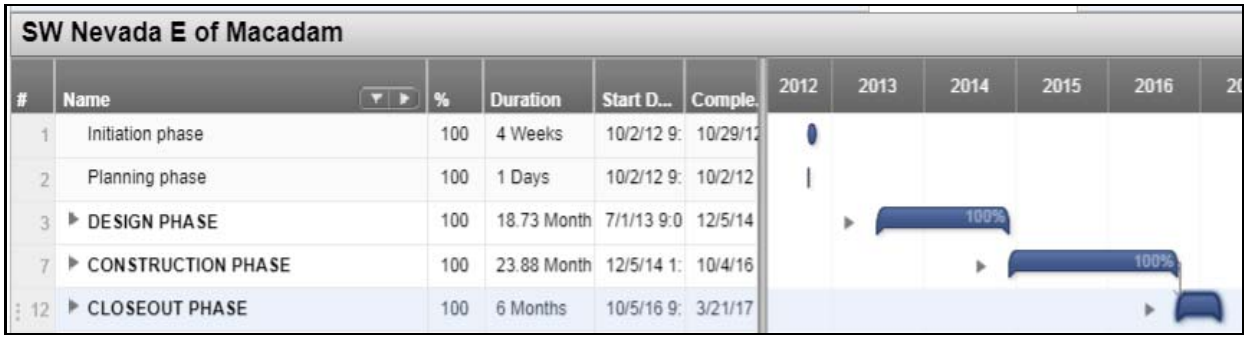
B. Schedule	
Initial mention:	September 2012
Initial planned comp:	December 2013
Current planned comp:	3/21/2017

C. Cost Plan	
Initial total cost est:	$685,000
FY 16-17 plan on 10/2016:	$172,000
FY 16-17 plan on 5/2017:	$172,000
Overall rate impact %:	0.057
Debt service, FY 16-17 est:	$42,923
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01665
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Nevada St and Macadam Avenue

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$65,902	$65,902		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$725,867	$725,867		$0	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$1,343	$1,343		$0	$0	$0	$0	$0	$0	$0
Sum	$794,000	$793,108		$0	$0	$0	$0	$0	$0	$0



055 Closeout Warranty

Major Project Completed

W01665 SW Nevada E of Macadam

Cornell Road Services - Macleay Park

A. Scope	
Original Description / Purpose:	This project will bore approximately 7,200 feet of 3-inch HDPE main in Cornell Road from the existing 8-inch main east of Skyline Boulevard (Greenleaf 1250 pressure zone) east to the Cornell Road services. This alternative will require up to three 2x2-inch regulators to keep the Cornell Road services supplied at the current HGL of 731 feet.
Rationale: Plans/Studies & Specifics	PWB and Parks agreed to construct a water main and activate service accounts for property owners receiving water from a temporary Parks 5,000 foot water main constructed in 1931. This project will replace the temporary main.
Major changes since start:	8/14: Original design required access through private property and construction in a landslide area. Redesigned alignment increased scope, cost and time. 11/2014: Fall Budget change as a new Major project. 3/2016: delays due to workload issues. 10/2016: cost increase for permitting, traffic and additional design. 2/2017: higher bids than expected and design delay. 8/2017: cost increase and delay due to rocks breaking equipment.
Other info / Coordination:	

B. Schedule	
Initial mention:	January 2013
Initial planned comp:	March 2017
Current planned comp:	1/23/2018

C. Cost Plan	
Initial total cost est:	$830,000
FY 16-17 plan on 10/2016:	$652,000
FY 16-17 plan on 5/2017:	$707,000
Overall rate impact %:	0.093
Debt service, FY 16-17 est:	$70,385
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01682
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	NW Cornell Road

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$19,392	$19,392		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$240,765	$240,765		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$1,041,311	$349,311		$692,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,302,000	$609,468		$692,000	$0	$0	$0	$0	$0	$0

040 Construction

Major Project Continuing

W01682 Cornell Road Services – Macleay Park

SW Bancroft Terr near Terwilliger Blvd

A. Scope	
Original Description / Purpose:	This project will replace 360 ft of 2-inch galvanized main with 6-inch main and replace 280 ft of 2-inch galvanized main with 4-inch main. Install 60 ft of 6-inch main and install 160 ft of 4-inch main. Renew 2 3/4-inch services and relocate 2 3/4-inch services and 1 1-inch service and potentially kill 1 1-inch service. Install 2 hydrants.
Rationale: Plans/Studies & Specifics	The existing 2-inch galvanized main has had 9 recorded leaks with 5 occurring in the last 3 years. The main is in poor condition and the repair crew has recommended replacement. This material is substandard, has a relatively short useful life, is susceptible to water quality deterioration, and is prone to a greater number of leaks than standard materials. In addition, abandoning the main and easement reduces risk of leaks and property damage.
Major changes since start:	Nov 2014: Fall Budget change as a new Major project. Aug 2016: technical adjustment to maintain project total. Feb 2017: bids were higher than anticipated and design delay from permits.
Other info / Coordination:	

B. Schedule	
Initial mention:	June 2014
Initial planned comp:	December 2016
Current planned comp:	7/13/2017

C. Cost Plan	
Initial total cost est:	$486,000
FY 16-17 plan on 10/2016:	$484,000
FY 16-17 plan on 5/2017:	$484,000
Overall rate impact %:	0.047
Debt service, FY 16-17 est:	$35,246
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01841
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Bancroft Terr near Terwilliger Blvd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$19,738	$19,738		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$185,500	$185,500		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$446,524	$446,524		$0	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$652,000	$651,763		$0	$0	$0	$0	$0	$0	$0

055 Closeout Warranty

Major Project Completed

W01841 SW Bancroft Terrace near Terwilliger Blvd

N Jantzen Ave west of Pavilion

A. Scope	
Original Description / Purpose:	This project will correct services without backflow devices and replace approximately 1,800 linear feet of 8 and 10-inch asbestos-concrete (transite) and PVC main with 1,722 feet of 12-inch ductile iron pipe and 6-inch asbestos-concrete pipe with 6-inch ductile iron pipe. The project will also install 5 fire hydrants and 11 services.
Rationale: Plans/Studies & Specifics	This is ranked high in the project ranking database for the following reasons: (1) as many as six nonstandard services lack complete documentation and appear to lack backflow devices, (2) the nonstandard services have leak histories and undocumented private connections are suspected (3) the asbestos-concrete main (while not affecting water quality) poses a hazard to crews making any repairs.
Major changes since start:	Nov 2014: Fall Budget change as a new Major project. Aug 2016: Technical adjustment to FY17-18 to maintain project total. Feb 2017: schedule delay due to easement and higher priority work. Sept 2017: project being replanned due to complex easement and additional scope.
Other info / Coordination:	Project was recommended in the Hayden Island Master Plan (2010). A majority of the system on Hayden Island is on private property. PWB will map the location of existing water services. We will also update PWB easements for access and maintenance, as needed. Construction will be required to upgrade nonstandard water services and PWB will address customer responsibilities for backflow prevention.

B. Schedule	
Initial mention:	June 2014
Initial planned comp:	August 2017
Current planned comp:	4/11/2019

C. Cost Plan	
Initial total cost est:	$1,283,000
FY 16-17 plan on 10/2016:	$135,000
FY 16-17 plan on 5/2017:	$54,000
Overall rate impact %:	0.092
Debt service, FY 16-17 est:	$69,358
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01842
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	N Starlight Ave & N Jantzen Ave

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$3,621	$3,621		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$191,740	$173,740		$18,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,087,577	$9,577		$0	$1,078,000	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,283,000	$186,938		$18,000	$1,078,000	$0	$0	$0	$0	$0

030 Design

Major Project Continuing

W01842 N Jantzen Ave west of Pavilion

SW Flower Terrace at Dosch

A. Scope	
Original Description / Purpose:	This project will replace 1,490 feet of 4-inch CI main with 6-inch main and renew 35 1-inch services and install 2 hydrants and replace 1 hydrant.
Rationale: Plans/Studies & Specifics	The existing 4-inch main is in poor condition and has had 2 leaks in the past 7 years. The repair crew has recommended replacement. In addition PWB's current standard is 6-inch main for fire flow. The hydrant replacement and installation will meet standard hydrant spacing requirements.
Major changes since start:	
Other info / Coordination:	

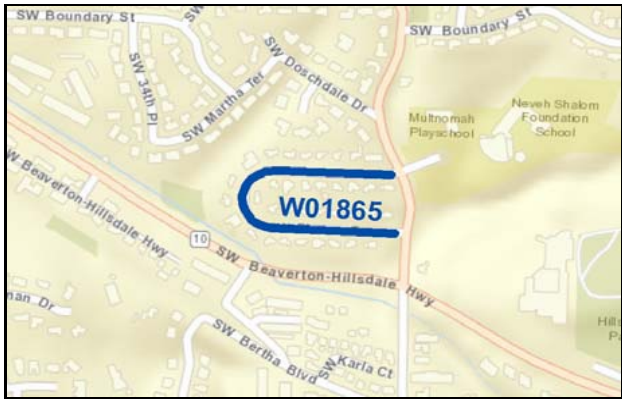
B. Schedule	
Initial mention:	August 2014
Initial planned comp:	July 2017
Current planned comp:	7/28/2017

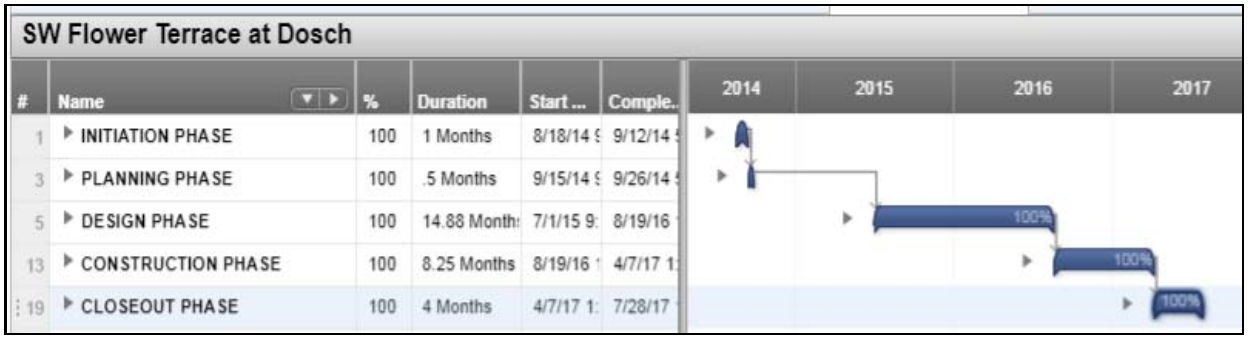
C. Cost Plan	
Initial total cost est:	$541,000
FY 16-17 plan on 10/2016:	$458,000
FY 16-17 plan on 5/2017:	$458,000
Overall rate impact %:	0.039
Debt service, FY 16-17 est:	$29,732
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01865
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Flower Terrace from Dosch Road to Dosch Road

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$50,628	$50,628		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$497,471	$497,471		$0	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$1,734	$1,734		$0	$0	$0	$0	$0	$0	$0
Sum	$550,000	$549,833		$0	$0	$0	$0	$0	$0	$0





055 Closeout Warranty

Major Project Completed

W01865 SW Flower Terrace at Dosch

SW Vista Ave from Spring St to Laurel St

A. Scope	
Original Description / Purpose:	This project will install 1078 ft of 8-inch main, 225 ft of 6-inch main, install 3 hydrants, renew 17 1-inch services, renew 1 2-inch fire service, install one 6 inch by 2 inch regulator and vault, and abandon 1042 ft of 8-inch main
Rationale: Plans/Studies & Specifics	The existing 8-inch main has had 6 recorded leaks with 4 occurring in the last 2 years. Maintenance and Construction recommends replacement. Cast iron pipe is more brittle than ductile iron pipe and therefore is more likely to break. PWB management decided to extend replacement to other sections of a similar age.
Major changes since start:	Aug 2015: Additional pipe added to scope increased cost and schedule. Now has a new status as a major project and a new initial estimate. Aug 2016: Change of connection location increased footage and time.
Other info / Coordination:	

B. Schedule	
Initial mention:	October 2014
Initial planned comp:	January 2016
Current planned comp:	9/19/2018

C. Cost Plan	
Initial total cost est:	$866,000
FY 16-17 plan on 10/2016:	$63,000
FY 16-17 plan on 5/2017:	$148,000
Overall rate impact %:	0.069
Debt service, FY 16-17 est:	$51,951
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01880
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Vista Ave from Spring to Laurel

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$109,324	$109,324		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$851,243	$97,243		$754,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$961,000	$206,568		$754,000	$0	$0	$0	$0	$0	$0

040 Construction Major Project Continuing

W01880 SW Vista Ave from Spring St to Laurel St

Outer Powell Transportation Safety

A. Scope	
Original Description / Purpose:	This project will review and consult with ODOT during design and design the water system mitigation of relocating 2,410 feet of 8-inch main, installing 260' of 6-inch water main. Also, relocate four fire hydrants and install three additional fire hydrants; and renew 43 1-inch water service lines, seven 2-inch water service lines, one 4-inch fireline, and one 6-inch fireline.
Rationale: Plans/Studies & Specifics	ODOT is planning to widen the travel roadway and add sidewalks and bike lanes to SE Powell Blvd, which will potentially impact Conduit 3 and the existing distribution mains, water service lines and fire hydrants.
Major changes since start:	June 2016: project on hold per ODOT. Aug 2016: planning restarted. Feb 2017: ODOT request now includes design and construction. estimates.
Other info / Coordination:	Construction of the required water system mitigation will be included in ODOT's Construction Contract.. PWB will provide Construction Management for the required Contract water system mitigation work and PWB crew abandonment of water mains, water main tie-ins and meter connections.. ODOT will be paying 100% of the costs for PWB Planning participation in the TAC meetings and research and review services starting Jan 29, 2015.

B. Schedule	
Initial mention:	March 2017
Initial planned comp:	June 2019
Current planned comp:	8/30/2019

C. Cost Plan	
Initial total cost est:	$1,974,000
FY 16-17 plan on 10/2016:	$0
FY 16-17 plan on 5/2017:	$36,000
Overall rate impact %:	0.141
Debt service, FY 16-17 est:	$106,712
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01924
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SE Powell Blvd from I-205 to SE 174th Ave

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

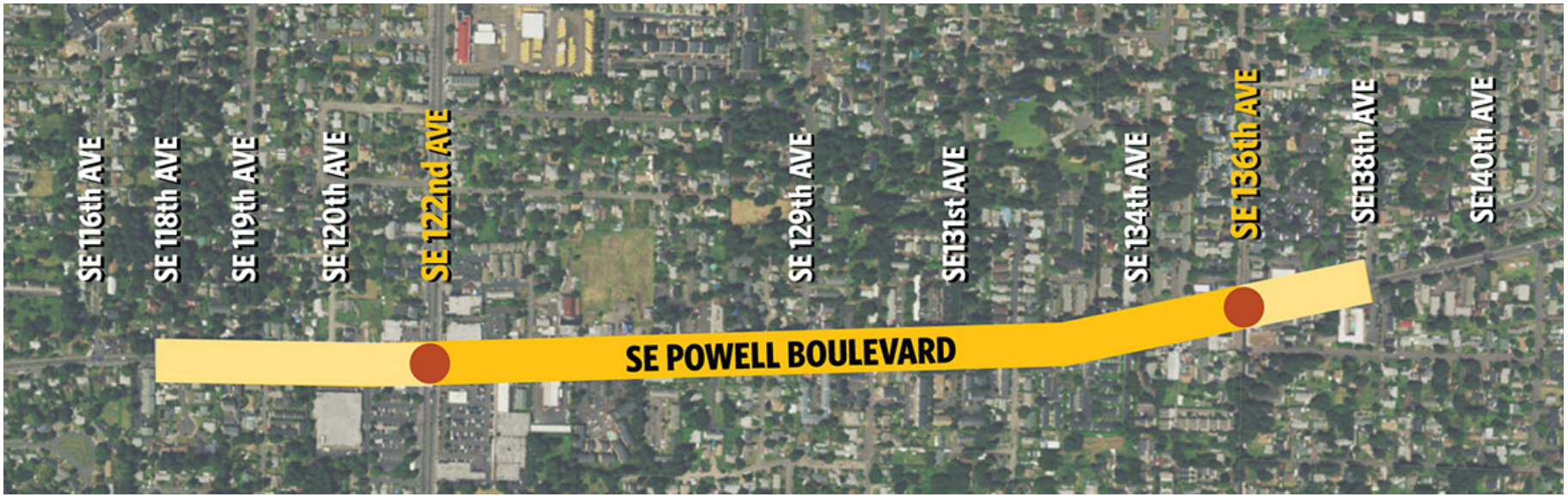
	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$161,000	$0		$161,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,809,000	$0		$0	$1,749,000	$60,000	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,974,000	$3,702		$161,000	$1,749,000	$60,000	$0	$0	$0	$0

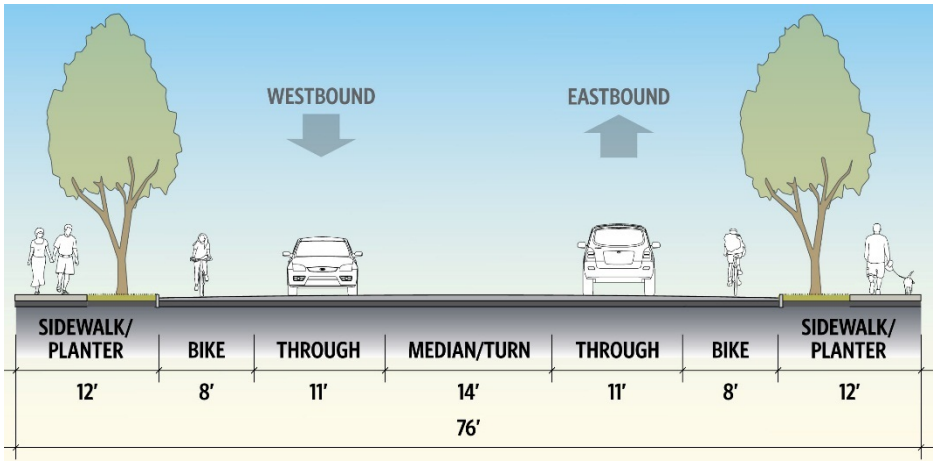
No Map for This Project

020 Planning

Major Project - added during FY16-17

W01924 Outer Powell Transportation Safety





Penridge Mains

A. Scope	
Original Description / Purpose:	This project will replace approximately 8,000 feet of existing main and renew 41 1-inch domestic services and install 7 hydrants.
Rationale: Plans/Studies & Specifics	The Greenleaf Pump Station and Penridge Service Area Basis of Design Report recommended several projects to facilitate taking the Penridge Tank out of service, replacing the aging Greenleaf Pump Station and improving fire flows due to undersized mains as identified in the Distribution System and Northwest Hills Master Plans. This project will replace and upsize the mains and allow the Penridge Tank to be taken out of service without further diminishing already substandard fire flows. The Greenleaf Pump Station is being replaced in a separate project.
Major changes since start:	May 2017: minor scope ajustment and delayed start caused FY cost replanning.
Other info / Coordination:	Project must coordinate with Greenleaf Pump Station project. Cost estimate assumes road repair will be minimal. Risks affecting cost contigency include relocation of PGE power lines, storm drain conflicts and pavement restoration costs.

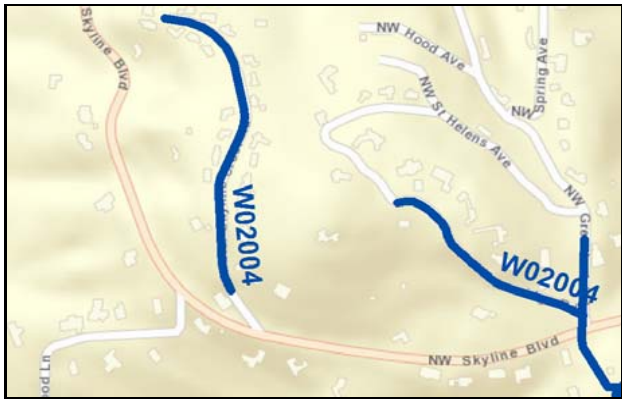
B. Schedule	
Initial mention:	April 2015
Initial planned comp:	March 2020
Current planned comp:	3/3/2020

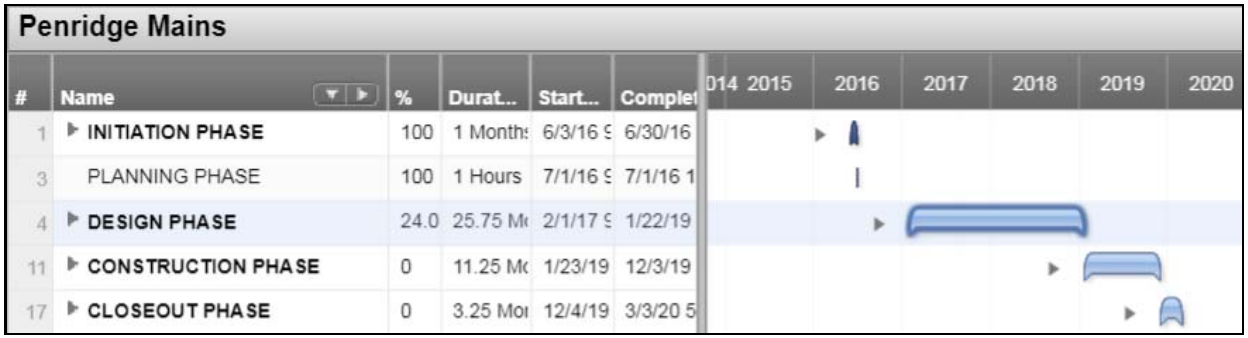
C. Cost Plan	
Initial total cost est:	$2,530,000
FY 16-17 plan on 10/2016:	$300,000
FY 16-17 plan on 5/2017:	$51,000
Overall rate impact %:	0.181
Debt service, FY 16-17 est:	$136,769
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02004
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	Penridge service area

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$388,985	$40,985		$272,000	$76,000	$0	$0	$0	$0	$0
Construction & Land	$2,140,400	$4,400		$0	$1,153,000	$983,000	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$2,530,000	$45,386		$272,000	$1,229,000	$983,000	$0	$0	$0	$0





030 Design Major Project Continuing

W02004 Penridge Mains

Willamette Blvd Bridge Main Replacement

A. Scope	
Original Description / Purpose:	This project will install 950 feet of 24-inch pipe in 42-inch casing, plus an additional 200 feet of un-cased 24-inch pipe to connect to the existing system. Abandon the existing 20 inch pipeline crossing the Willamette Boulevard Bridge
Rationale: Plans/Studies & Specifics	The 20-inch pipeline on the N Willamette Boulevard Bridge is the primary supply to approximately 5,000 services in North Portland and to the St Johns pipeline crossing of the Willamette River. Both the existing 20-inch pipeline on the bridge and the bridge are in poor condition. The pipeline is vulnerable to failure due to condition and also due to a seismic event. Because of the high risk of failure, this project has a positive cost/benefit value of 1.5.
Major changes since start:	May 2017: replanned due to delayed project start.
Other info / Coordination:	Project contingency is $450,000 higher than planning level contingency of 50%. Higher contingency is due to risk involved with obtaining railroad permits, obtaining a land use review permit, designing to avoid other major utilities in the project area and known soil contamination.

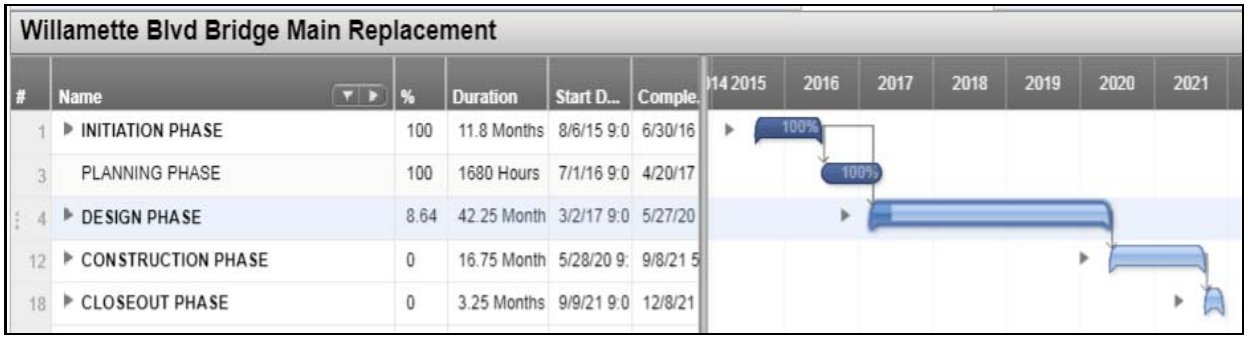
B. Schedule	
Initial mention:	August 2015
Initial planned comp:	December 2020
Current planned comp:	12/8/2021

C. Cost Plan	
Initial total cost est:	$4,500,000
FY 16-17 plan on 10/2016:	$250,000
FY 16-17 plan on 5/2017:	$42,000
Overall rate impact %:	0.321
Debt service, FY 16-17 est:	$243,266
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02005
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	N Willamette Blvd between Alma Ave and Carey Blvd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$1,474,829	$25,829		$120,000	$715,000	$614,000	$0	$0	$0	$0
Construction & Land	$3,025,000	$0		$0	$0	$10,000	$2,553,000	$462,000	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$4,500,000	$25,829		$120,000	$715,000	$624,000	$2,553,000	$462,000	$0	$0



030 Design

Major Project Continuing

W02005 Willamette Blvd Bridge Main Replacement

SW Boones Ferry Rd at SW Arnold St Bridge

A. Scope	
Original Description / Purpose:	This project will abandon two parallel 6-inch cast iron water mains in SW Boones Ferry Rd between SW Comus Ct and SW Arnold St (about 800 feet). Replace with one 460-foot-long 8-inch ductile iron water main, attaching the 8-inch pipe to a 126-foot-long new bridge structure. Also, renew two water service lines.
Rationale: Plans/Studies & Specifics	BES will be removing the existing roadway bed crossing the existing culvert structure under the roadway, in order to construct a 126-foot-long bridge structure in SW Boones Ferry Rd north of SW Arnold St. The two existing parallel 6-inch water mains in SW Boones Ferry Rd will also be impacted by this roadway removal.
Major changes since start:	Feb 2017: schedule and cost increase due to BES and contaminated media. Sept 2017: replanning and minor FY cost shift to match BES schedule.
Other info / Coordination:	oBES's consultant will design and bid the water mitigation work. BES will share costs on this project. The Fire Bureau has authorized cutting and plugging the two 6-inch water mains, and leaving the area with an anticipated diminished fire flow of 500 gpm for a maximum duration of nine months with the understanding that the fire hydrants at certain locations will maintain their nominal fire flow capacity.

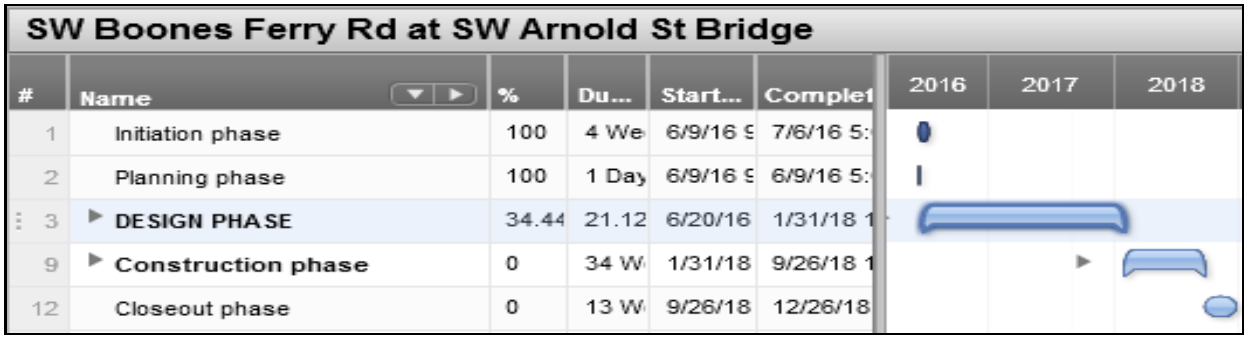
B. Schedule	
Initial mention:	June 2016
Initial planned comp:	February 2018
Current planned comp:	12/26/2018

C. Cost Plan	
Initial total cost est:	$560,000
FY 16-17 plan on 10/2016:	$0
FY 16-17 plan on 5/2017:	$147,000
Overall rate impact %:	0.040
Debt service, FY 16-17 est:	$30,273
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02073
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Boones Ferry Rd NNL Arnold St Bridge

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$39,876	$29,876		$10,000	$0	$0	$0	$0	$0	$0
Construction & Land	$520,000	$0		$218,000	$302,000	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$560,000	$29,876		$228,000	$302,000	$0	$0	$0	$0	$0



030 Design

Major Project Continuing

W02073 SW Boones Ferry Rd at SW Arnold St Bridge

SE 20th Ave Oak St north of SE Pine St

A. Scope	
Original Description / Purpose:	This project will install 207 feet of 16-inch ductile iron (DI) pipe, 267 feet of 8-inch DI pipe, and abandon 441 feet of 8-inch and 93 feet of 16-inch CI water main. Also, renew four water service lines, transfer three water services, renew one fire hydrant, and install a 20-inch butterfly valve.
Rationale: Plans/Studies & Specifics	BES will be installing a 24-inch sanitary sewer line 4 feet away from the existing 8-inch water main in SE 20th Ave, in violation of OAR 333/340. They are trying to stay away from the existing 20-inch water main located on the west side of SE 20th Ave, as well as the existing sanitary sewer line, which is also located on the west side of SE 20th Ave, and is supported by a wooden trestle.
Major changes since start:	Feb 2017: scope change to improve design. Sept 2017: replanning to match BES.
Other info / Coordination:	BES will share costs in this project. The water main work will be included in the BES contract.

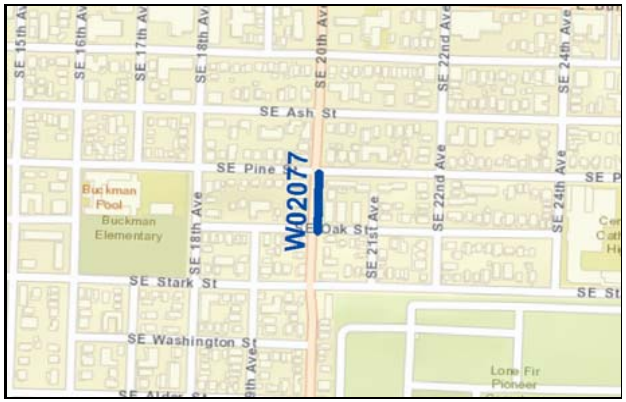
B. Schedule	
Initial mention:	June 2016
Initial planned comp:	March 2018
Current planned comp:	5/22/2018

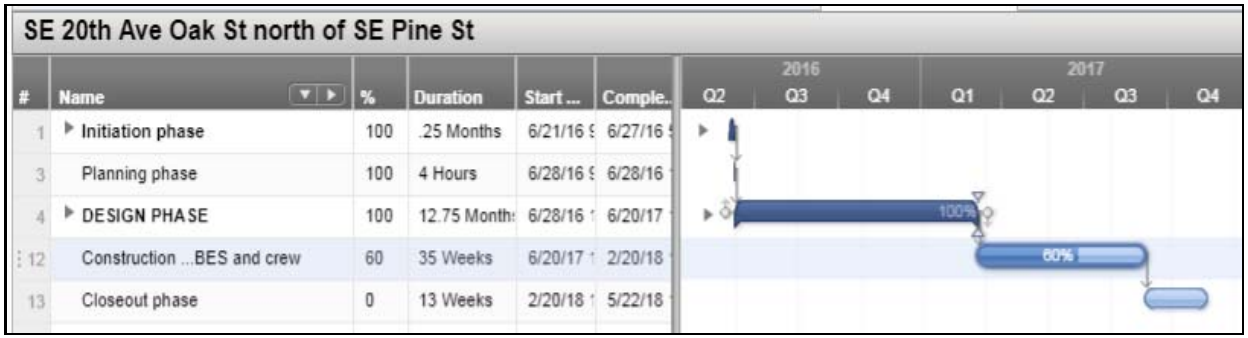
C. Cost Plan	
Initial total cost est:	$454,000
FY 16-17 plan on 10/2016:	$0
FY 16-17 plan on 5/2017:	$112,000
Overall rate impact %:	0.032
Debt service, FY 16-17 est:	$24,543
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02077
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SE 20th Ave from Oak St to NNL Pine St

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$54,670	$54,670		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$398,504	$3,504		$395,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$454,000	$58,174		$395,000	$0	$0	$0	$0	$0	$0





040 Construction

Major Project Continuing

W02077 SE 20th Ave Oak St north of SE Pine St

Humboldt Sewer Repair

A. Scope	
Original Description / Purpose:	This project will relocate approximately 145 feet of 8-inch pipe, 55 feet of 6-inch pipe, renew a 1-inch service and connect one fire hydrant. Install temporary water service lines and renew the permanent water service lines for nine water service lines for spot repairs. Run temporary water service lines and renew for 17 lateral conflicts. (Revised March 2017)
Rationale: Plans/Studies & Specifics	BES will install a manhole that conflicts with the 8-inch pipe. They will also make spot repairs crossing water service lines which require temporary water service installations and renewals.
Major changes since start:	Feb 2017: design delay to PBOT conditions. Aug 2017: design delay to meet PBOT requirements; costs reduced.
Other info / Coordination:	BES will cost share on the 8-inch main relocation and 100% of the water service work.

B. Schedule	
Initial mention:	July 2016
Initial planned comp:	September 2017
Current planned comp:	3/21/2018

C. Cost Plan	
Initial total cost est:	$487,000
FY 16-17 plan on 10/2016:	$0
FY 16-17 plan on 5/2017:	$383,000
Overall rate impact %:	0.023
Debt service, FY 16-17 est:	$17,623
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02100
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	N Mississippi Ave from N Jessup St to N Killingsworth S

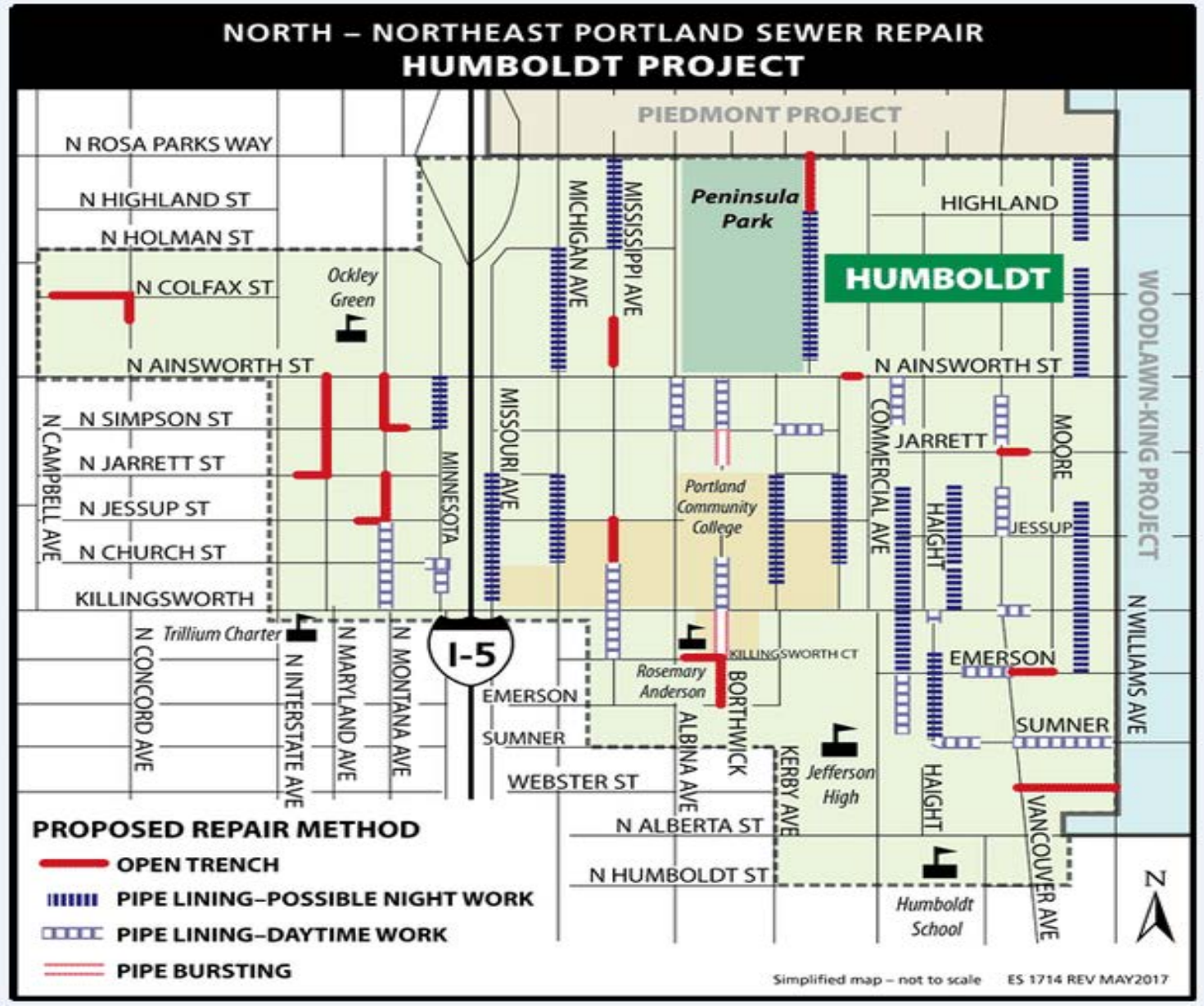
E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$59,722	$54,722		$5,000	$0	$0	$0	$0	$0	$0
Construction & Land	$265,376	$1,376		$264,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$326,000	$56,097		$269,000	$0	$0	$0	$0	$0	$0

040 Construction

Major Project Continuing

W02100 Humboldt Sewer Repair



NE 47th Ave and Columbia Blvd LID

A. Scope	
Original Description / Purpose:	This project will relocate 2,035 feet of 12-inch water main, relocate three fire hydrants, install four new fire hydrants, lower and sleeve 12 1-inch water service lines under proposed stormwater planters, renew nine 1-inch and one 2-inch water service lines. Approximately 110' of the relocated pipe will need to be installed in a casing underneath the Columbia Slough.
Rationale: Plans/Studies & Specifics	PBOT will be completely rebuilding the right-of-way and installing Stormwater planters overtop of the existing 12-inch cast iron water main. Although the 12-inch pipe is a straight run of pipe, the impacted sections have connections for 12 water service lines.
Major changes since start:	Feb 2017: redesign and reduced cost.
Other info / Coordination:	This construction work will be included in PBOT's LID Contract. PBOT has designed the new travel roadway to be 12-inches of reinforced concrete, and as a result has requested that PWB consider: 1) installing the new main under the proposed 10-foot wide shared bike/pedestrian path on the east side of NE 47th Ave, and 2) installing casing at random locations to the west side of the travel roadway for anticipated future water service lines when the properties are redeveloped after construction of the new roadway.

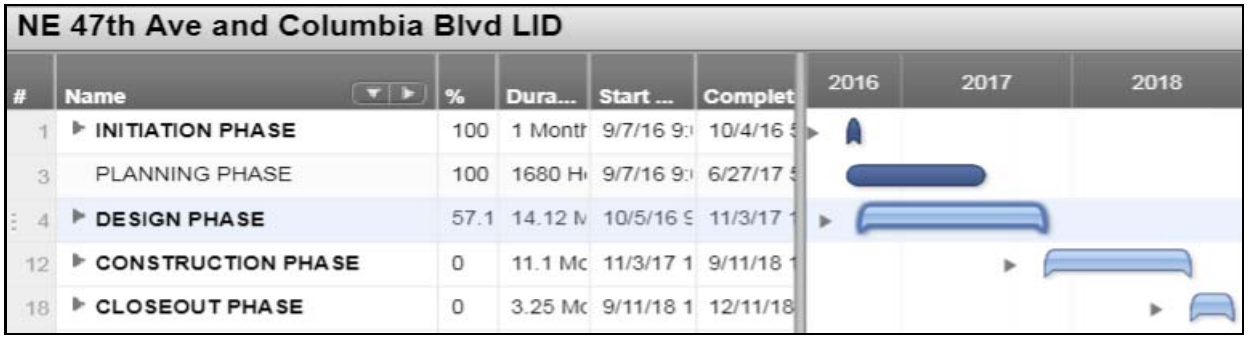
B. Schedule	
Initial mention:	September 2016
Initial planned comp:	March 2018
Current planned comp:	12/11/2018

C. Cost Plan	
Initial total cost est:	$1,400,000
FY 16-17 plan on 10/2016:	$0
FY 16-17 plan on 5/2017:	$100,000
Overall rate impact %:	0.100
Debt service, FY 16-17 est:	$75,683
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02115
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	NE 47th Ave from north of NE Columbia Blvd to south of NE Cornfoot Rd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$90,938	$60,938		$30,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,309,000	$0		$1,220,000	$89,000	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,400,000	$60,938		$1,250,000	$89,000	$0	$0	$0	$0	$0



030 Design

Major Project - added during FY16-17

W02115 NE 47th Ave & Columbia Blvd LID

Columbia Slough Outfall 104b

A. Scope	
Original Description / Purpose:	This project will install a total of 845 feet of new ductile iron (DI) main. This includes replacing approximately 20 feet of 6-inch cast iron (CI) main with new 6-inch DI main, replacing approximately 205 feet of 8-inch CI main with new 8-inch DI main, and replacing approximately 620 feet of 10-inch CI main with new 10-inch DI main. This project will renew two (2) 1-inch services, transfer zero (0) services, and relocate one (1) hydrant.
Rationale: Plans/Studies & Specifics	This PWB project is warranted because BES will be constructing stormwater facilities as well as storm sewer inlets, laterals, and manholes that conflict with existing water mains.
Major changes since start:	Sept 2017: replanning ahead to match BES schedule and cost plan.
Other info / Coordination:	BES will pay the required cost share portion of this main replacement work. BES to provide traffic control and surface restoration. BES's consultant to produce design for this project. The entire project budget is over $3M.

B. Schedule	
Initial mention:	September 2016
Initial planned comp:	April 2018
Current planned comp:	4/23/2018

C. Cost Plan	
Initial total cost est:	$936,000
FY 16-17 plan on 10/2016:	$0
FY 16-17 plan on 5/2017:	$138,000
Overall rate impact %:	0.067
Debt service, FY 16-17 est:	$50,599
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02134
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	NE Sandy Boulevard, NE Shaver Street, NE 125th Place, and NE 136 Avenue

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$47,149	$39,149		$8,000	$0	$0	$0	$0	$0	$0
Construction & Land	$888,000	$0		$888,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$936,000	$39,149		$896,000	$0	$0	$0	$0	$0	$0

030 Design

Major Project Continuing

W02134 Columbia Slough Outfall 104b

NE Wheeler Basin Relocations

A. Scope	
Original Description / Purpose:	This project will abandon 90 feet of 4-inch cast iron (CI) water pipe, 380 feet of 6-inch CI water pipe, 70 feet of 6-inch Ductile Iron (DI) water pipe, and 690 feet of 8-inch CI water pipe. Install 50 feet of 4-inch DI pipe, 550 feet of 6-inch DI, and 650 feet of 8-inch DI pipe. Install 2 new hydrants and 7 new water services. Two of the new services will be lowered and sleeved two under Stormwater planters. Install 19 temporary water services and renew the services upon completion of the sewer work.
Rationale: Plans/Studies & Specifics	BES will be installing new sanitary sewer main, manholes, and Stormwater planters which will impact the existing water mains, fire hydrants and water service lines.
Major changes since start:	May 2015: project replanned with additional scope and cost. Aug 2017: BES procurement delays.
Other info / Coordination:	There is considerable PWB construction cost for the tie-ins on main relocation and temporary water service installations. BES will be responsible for a cost share of the water main installations, and for 100% of the cost for relocating or renewing impacted fire hydrants, and temporary water service line installations, relocation of water service lines and renewal of water service lines. The water main installation work will be designed by BES's consultant, and constructed under BES's construction contract.

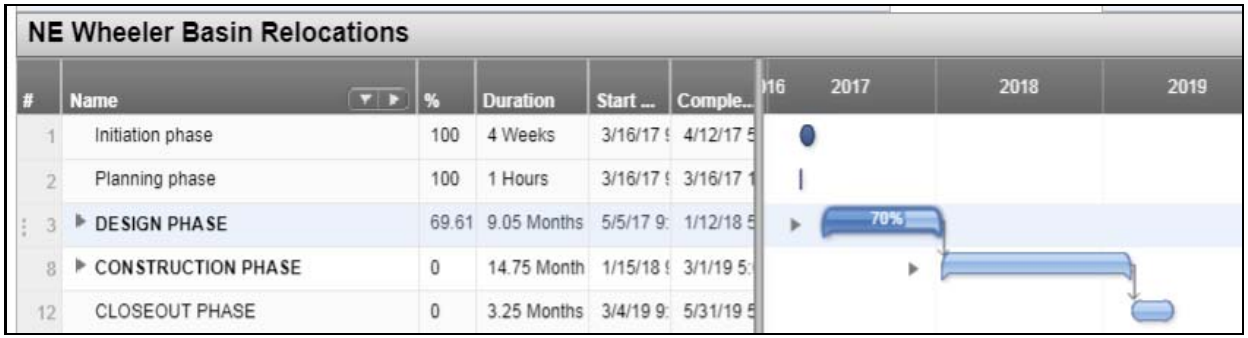
B. Schedule	
Initial mention:	March 2017
Initial planned comp:	September 2018
Current planned comp:	5/31/2019

C. Cost Plan	
Initial total cost est:	$832,000
FY 16-17 plan on 10/2016:	$0
FY 16-17 plan on 5/2017:	$25,000
Overall rate impact %:	0.059
Debt service, FY 16-17 est:	$44,977
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02192
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	Various

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

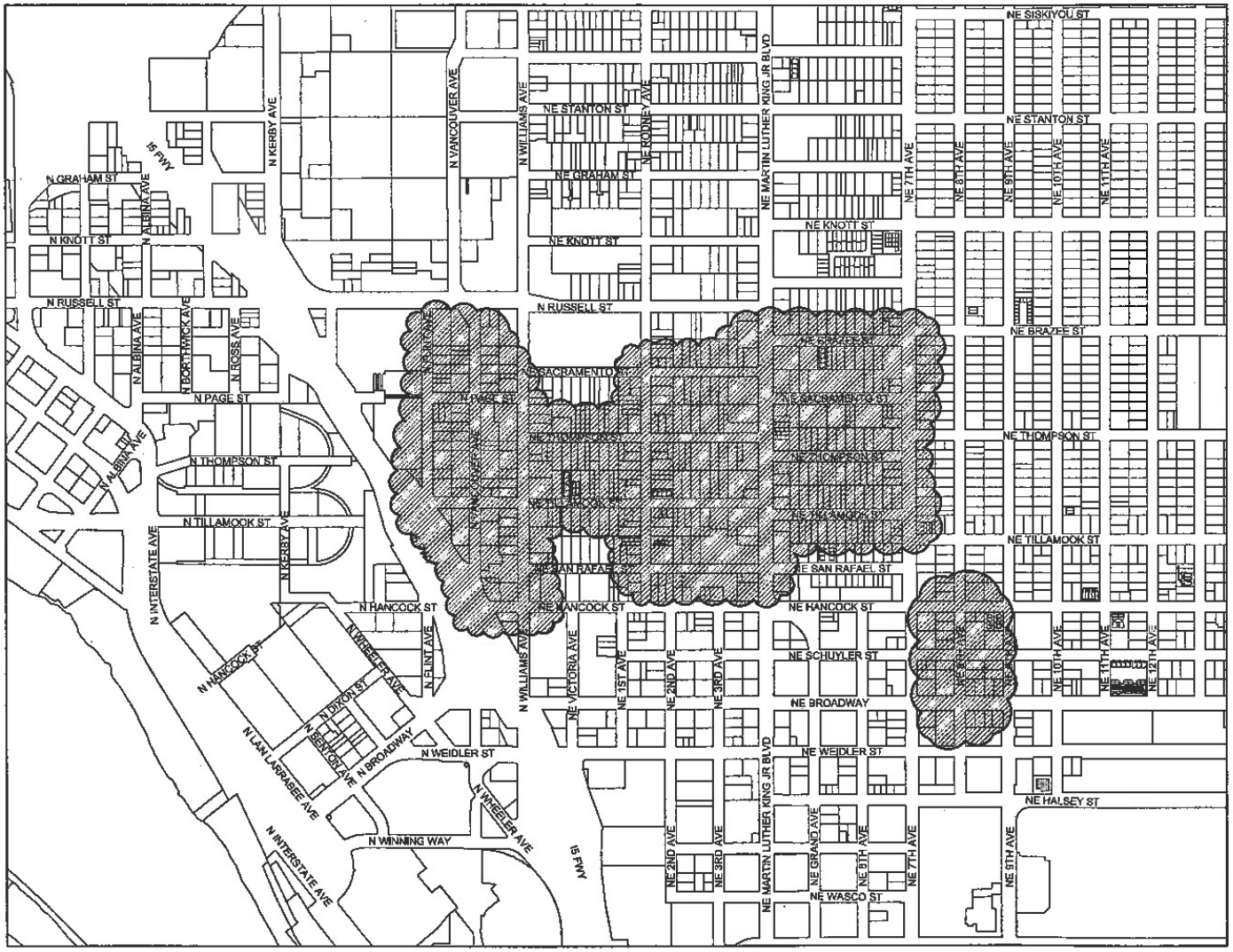
	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$112,571	$16,571		$96,000	$0	$0	$0	$0	$0	$0
Construction & Land	$719,000	$0		$659,000	$60,000	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$832,000	$16,570		$755,000	$60,000	$0	$0	$0	$0	$0



030 Design

Major Project - added during FY16-17

W02192 NE Wheeler Basin Relocations



Interstate Facility Rehabilitation

A. Scope	
Original Description / Purpose:	The project rebuilds PWB's main maintenance facility. Master planning from 2002 – 2006 developed the baseline requirements for current and long-term needs. Recent updates to the master plan and additional program summary work has created the basis for the design of the facility now underway. Two new buildings will replace the 85-year-old Maintenance Building that currently serves as the main office and warehouse. Site improvements to the 11-acre campus improve vehicle and employee circulation and bring the property up to current code requirements for storm water management and landscaping.
Rationale: Plans/Studies & Specifics	Geotechnical studies completed in 1996 and during the master planning period showed that the Maintenance Building and a large covered parking area for fleet vehicles would most likely not survive a sizable seismic event. Building assessments also showed that the design was not conducive for remodeling to meet current program needs. Deferrals to code-required site improvements had been granted over the last 15 years as small improvements were permitted. Time extensions had been exhausted and the Bureau was at risk of being cited for violation.
Major changes since start:	8/2012: approach/scope change because project funding issues necessitated a two phased design; schedule and cost plan adjusted accordingly. 12/2012: delay caused by new City contracting process causing a cost shift into FY16-17. 3/2013: decontamination work sequencing caused 2-month delay but we may catch up. 3/2014: phase 2 construction was able to start earlier than planned. 8/2015: delay due to permitting of add-alternate work.
Other info / Coordination:	PWB's Maintenance/Construction and Operations programs will operate in this facility during construction. Construction phasing will allow staff to move in as sections are completed and spread costs over years. Fleet vehicles and equipment and functions will be relocated for improvements. The new facility will seek a LEED Gold certification. "Other" costs in Section E include interagency charges for permits, materials testing and miscellaneous fees.

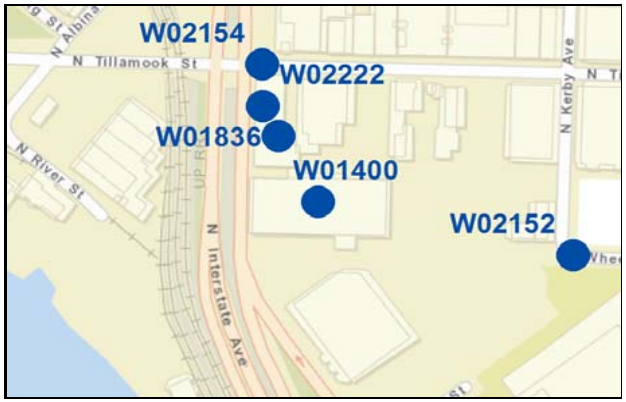
B. Schedule	
Initial mention:	6/1/2010
Initial planned comp:	12/1/2013
Current planned comp:	8/4/2016

C. Cost Plan	
Initial total cost est:	$49,383,000
FY 16-17 plan on 10/2016:	$400,000
FY 16-17 plan on 5/2017:	$400,000
Overall rate impact %:	3.513
Debt service, FY 16-17 est:	$2,658,730
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01400
Program:	Distribution
Subprogram:	Field Support
Nearest Address:	1900 N. Interstate Avenue

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$87,429	$87,429		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$5,597,632	$5,597,632		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$42,617,222	$42,617,222		$0	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$878,969	$878,969		$0	$0	$0	$0	$0	$0	$0
Sum	$49,182,000	$49,181,253		$0	$0	$0	$0	$0	$0	$0



055 Closeout Warranty

Major Project Completed

W01400 Interstate Facility Rehabilitation

Fulton Pump Station Improvements

A. Scope	
Original Description / Purpose:	This project will replace the 12 million gallon per day Fulton Pump Station with a new facility located in Willamette Park.
Rationale: Plans/Studies & Specifics	The 2006 Burlingame Service Area Supply Facility Master Plan recommended that the existing Fulton Pump Station be replaced or rehabilitated to mitigate the risk of an extended outage due to failure. Major studies recommending this project include the Burlingame Service Area Supply Facilities Master Plan (2006), the Distribution System Master Plan (2007), and the Fulton Pump Station Improvements Project Basis of Design Report (2007).
Major changes since start:	Cost increase: Prelim Design identified major operational risk in existing location; a new facility in Willamette Park, including land rights was needed. $545K was transferred from the PWB to Parks. 11/11: schedule delay to investigate alternative procurement. 8/12: cost increase from design complexity. 7/13: cost and schedule increase from design complexity. 7/14: delay from permitting and electrical design, costs shifted FYs. 9/14: cost shift into FY15/16. 03/15: increased contingency, staffing and higher bid than planned. 08/15: cost increase from additional staffing, consulting and risk. 3/16: cost shift to FY16-17. 10/16: cost + schedule increases. 8/17: additional pump control scope added cost + time.
Other info / Coordination:	Electricity use will be reduced with this project. "Other" costs in Section E include work prior to 2009 for park permits, materials testing and miscellaneous fees.

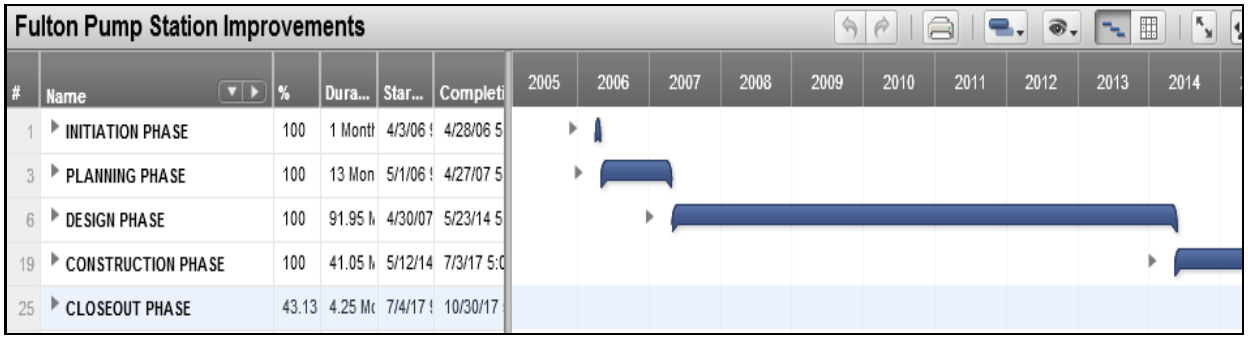
B. Schedule	
Initial mention:	4/3/2006
Initial planned comp:	5/1/2010
Current planned comp:	10/30/2017

C. Cost Plan	
Initial total cost est:	$11,647,000
FY 16-17 plan on 10/2016:	$4,215,000
FY 16-17 plan on 5/2017:	$4,298,191
Overall rate impact %:	1.332
Debt service, FY 16-17 est:	$1,007,984
Lifecycle cost est:	Likely decrease

D. Identification	
SAP #:	W01358
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	Willamette Park

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$163,203	$163,203		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$3,246,454	$3,246,454		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$15,069,414	$14,899,414		$170,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$166,762	$166,762		$0	$0	$0	$0	$0	$0	$0
Sum	$18,646,000	$18,475,833		$170,000	$0	$0	$0	$0	$0	$0



050 Closeout

Major Project Completed

W01358 Fulton Pump Station Improvements

Greenleaf Pump Station

A. Scope	
Original Description / Purpose:	This project will plan, design and construct a replacement of the Greenleaf pump station at the existing site. Flow upgrades will render Penridge tank superfluous and will be demolished in this project as well. The new pump station will pump directly to the distribution system.
Rationale: Plans/Studies & Specifics	Greenleaf Pump Station (PS) and Penridge Tank (Tank) have high risk ratings due to the need for fire flow in a residential area near Forest Park and parts of the Tank have extensive corrosion. The highest benefit and least-cost alternative was to take out the Tank and rehabilitate the PS with energy-efficient pumps for normal distribution needs and two large pumps for fire flows. Five major studies justify this project. The main study was the 2009 Greenleaf Pump Station & Penridge Service Area Basis of Design Report.
Major changes since start:	8/2014: project restarted, the scope divided into two projects. Portion of previous work retained. 8/2016: technical adjustment in FY18-19 to maintain project total. 8/2017: scope changes increased cost and budget.
Other info / Coordination:	Other studies supporting this project include Evaluation of Pumping and Storage Alternatives to Meet Water Demands in the Northwest Hills Area (1987), the Northwest Hills Master Plan PCR (2006), the Northwest Hills Service Area Master Plan (2007), the Distribution System Master Plan (2007). An associated distribution mains improvement project to complete improvements for fire flow is not included in this project.

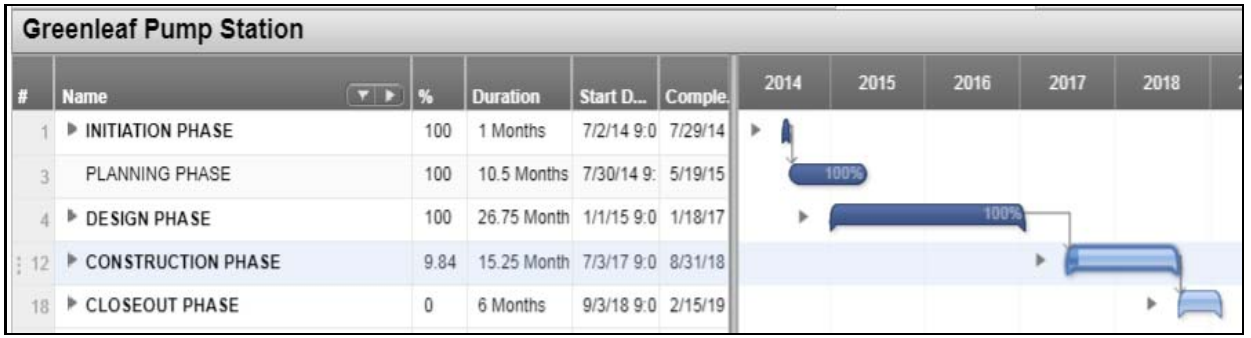
B. Schedule	
Initial mention:	July 2014
Initial planned comp:	October 2018
Current planned comp:	2/15/2019

C. Cost Plan	
Initial total cost est:	$1,710,000
FY 16-17 plan on 10/2016:	$140,000
FY 16-17 plan on 5/2017:	$140,000
Overall rate impact %:	0.185
Debt service, FY 16-17 est:	$139,851
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01446
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	Adjacent and south of 431 NW Greenleaf Rd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$27,325	$27,325		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$900,198	$900,198		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$1,654,534	$42,534		$1,240,000	$372,000	$0	$0	$0	$0	$0
Other (e.g. closeout)	$4,651	$4,651		$0	$0	$0	$0	$0	$0	$0
Sum	$2,587,000	$974,708		$1,240,000	$372,000	$0	$0	$0	$0	$0



040 Construction Major Project Continuing

W01446 Greenleaf Pump Station

Tabor PS Improvements

A. Scope	
Original Description / Purpose:	This project will install one permanent 300 kilowatt engine drive generator to power the entire pump station electrical demand. Add a new RTU.
Rationale: Plans/Studies & Specifics	The Tabor 590 Service Area was classified as being deficient for one or more screening service goals, specifically fire, storage and outage. Improvements for the addition of the generator were recommended in the subsequent Tabor 590 PS Generator Technical Memorandum to address risks associated with electrical outages and prevention of potential boil water events.
Major changes since start:	7/2014: preliminary design reduced the original scope (VFD removed) and changed project approach. Reduced cost but increased duration due to land use review. 3/15: added scope, delay due to obtaining land use permits, increased cost. 3/16: delay to match schedule with Tabor Reservoir Adjustment project and costs increased to original estimate.
Other info / Coordination:	Land use review is determined by the Tabor Reservoir Adjustments project W01524 and the schedule will be affected.

B. Schedule	
Initial mention:	October 2013
Initial planned comp:	September 2015
Current planned comp:	1/18/2018

C. Cost Plan	
Initial total cost est:	$550,000
FY 16-17 plan on 10/2016:	$132,000
FY 16-17 plan on 5/2017:	$209,000
Overall rate impact %:	0.039
Debt service, FY 16-17 est:	$29,732
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01757
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	Mt. Tabor Reservoir

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$215,792	$215,792		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$333,687	$270,687		$63,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$550,000	$486,480		$63,000	$0	$0	$0	$0	$0	$0

040 Construction

Major Project Continuing

W01757 Tabor PS Improvements

Council Crest Tank Roof Replacement

A. Scope	
Original Description / Purpose:	This project will replace the Council Crest Tank roof and upper wall shell.
Rationale: Plans/Studies & Specifics	Council Crest Tank is the highest-elevation tank in SW Portland serving about 1,300 customers. Currently, the tank does not have any backup gravity supplies and the roof has extensive corrosion. Roof failure from earthquake, ice or wind storm would mean a long-term Boil Water Notice and nightly water outages. The reactive repair costs would be higher than planned costs, and the temporary loss of the tank would put operational pressure on other parts of the system. The benefit-cost analysis showed the roof replacement was the least risk cost of any alternative.
Major changes since start:	March 2016: design delay, additional work to test for contamination and more detailed estimating added cost. Feb 2017: increased staffing and review added cost.
Other info / Coordination:	A proposed 8-inch bypass, which is a part of the Portland Heights Pump Main Bypass project, must be installed and tested prior to initiating the rehabilitation of the Council Crest Tank roof. The 8-inch bypass allows excess flows from the PHPS to be recycled into the PHT when the PHPS is pumping without the Council Crest Tank.

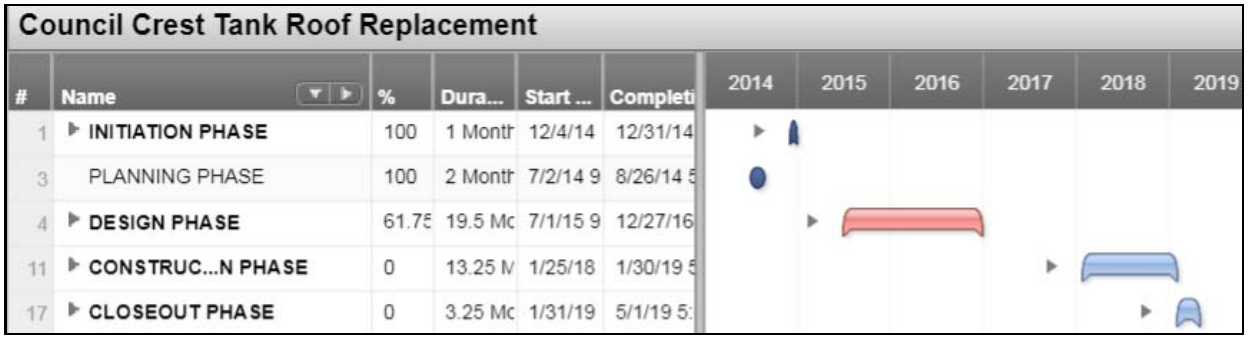
B. Schedule	
Initial mention:	July 2014
Initial planned comp:	May 2018
Current planned comp:	5/1/2019

C. Cost Plan	
Initial total cost est:	$700,000
FY 16-17 plan on 10/2016:	$163,000
FY 16-17 plan on 5/2017:	$185,000
Overall rate impact %:	0.094
Debt service, FY 16-17 est:	$70,763
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01848
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	3445 SW Council Crest Drive

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$383,606	$318,606		$65,000	$0	$0	$0	$0	$0	$0
Construction & Land	$925,000	$0		$105,000	$820,000	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,309,000	$318,604		$170,000	$820,000	$0	$0	$0	$0	$0



030 Design

Major Project Continuing

W01848 Council Crest Tank Roof Replacement

Water Quality Lab Remodel

A. Scope	
Original Description / Purpose:	The project will create an in-house laboratory section within the existing Water Quality Laboratory at Interstate to support the requirements of the Bull Run Treatment Variance.
Rationale: Plans/Studies & Specifics	In 2012, the State of Oregon granted PWB a variance to the Long Term 2 Enhanced Surface Water Treatment (LT2) Rule for the Bull Run source water. One of the variance conditions requires PWB to monitor for Cryptosporidium. We have been shipping water samples to accredited private contract laboratories--of which only a handful exist. This weekly arrangement has become challenging and there is a projected decline in the commercial Cryptosporidium lab industry. Consequently, PWB must secure its own in-house capabilities and expertise to ensure ongoing LT2 compliance.
Major changes since start:	June 2016: revised schedule. Project stayed at 450K. July 2017: delay in getting materials.
Other info / Coordination:	Variance will end November 22, 2017 per Oregon Health Authority. Cryptosporidium monitoring and sample analysis must continue until a treatment facility is constructed.

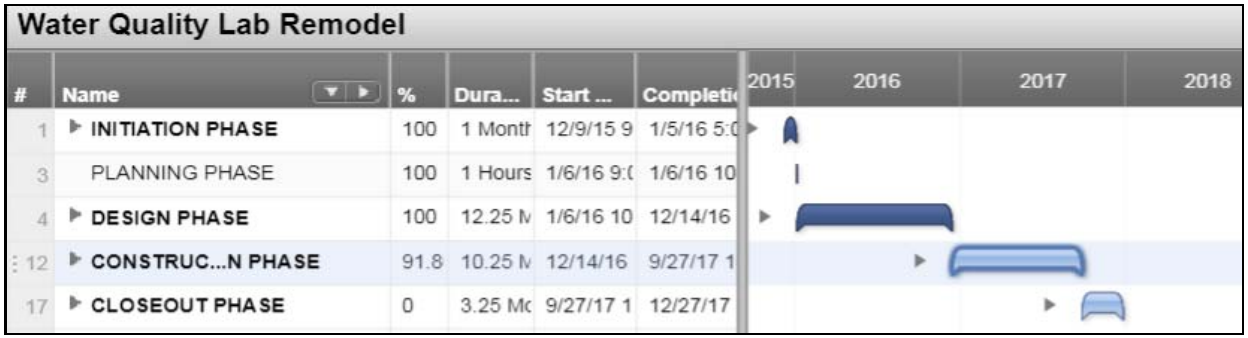
B. Schedule	
Initial mention:	December 2015
Initial planned comp:	April 2017
Current planned comp:	12/27/2017

C. Cost Plan	
Initial total cost est:	$450,000
FY 16-17 plan on 10/2016:	$400,000
FY 16-17 plan on 5/2017:	$417,000
Overall rate impact %:	0.032
Debt service, FY 16-17 est:	$24,327
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01836
Program:	Regulatory Compliance
Subprogram:	Water Quality Regulatory Compliance
Nearest Address:	2010 N Interstate

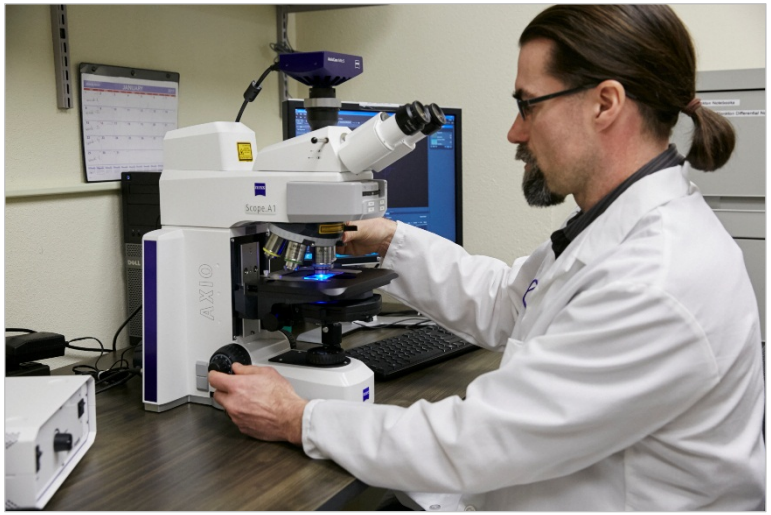
E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$320	$320		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$124,555	$124,555		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$316,895	$243,895		$73,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$7,931	$7,931		$0	$0	$0	$0	$0	$0	$0
Sum	$450,000	$376,702		$73,000	$0	$0	$0	$0	$0	$0



040 Construction Major Project Continuing

W01836 Water Quality Lab Remodel



Road 10 MP 4.6 - 6.2

A. Scope	
Original Description / Purpose:	This project will grind existing pavement, restore road subgrade, pave, and stripe 2 miles of Road 10. The road will be brought up to current standards for width using fill and walls to add an average of two feet of width to the segment. Approximately six culverts will be replaced with Aluminum Alloy Pipe.
Rationale: Plans/Studies & Specifics	This segment of Road 10 is part of the primary access to Headworks facility. It provides access from Headworks to secondary egress from the watershed, should the main route be blocked. This primary road is at the low end of Poor conditions and the road width does not meet the current design standard for this Class A road. This project is recommended by the 2012 Bull Run Roads Asset Management Plan and the Bull Run Watershed Road Repair Project Selection for fiscal years '14-'18.
Major changes since start:	Nov 2014: Fall Budget change as a new Major project. March 2016: delay in design phase to combine with another project. Reduced construction scope and cost.
Other info / Coordination:	

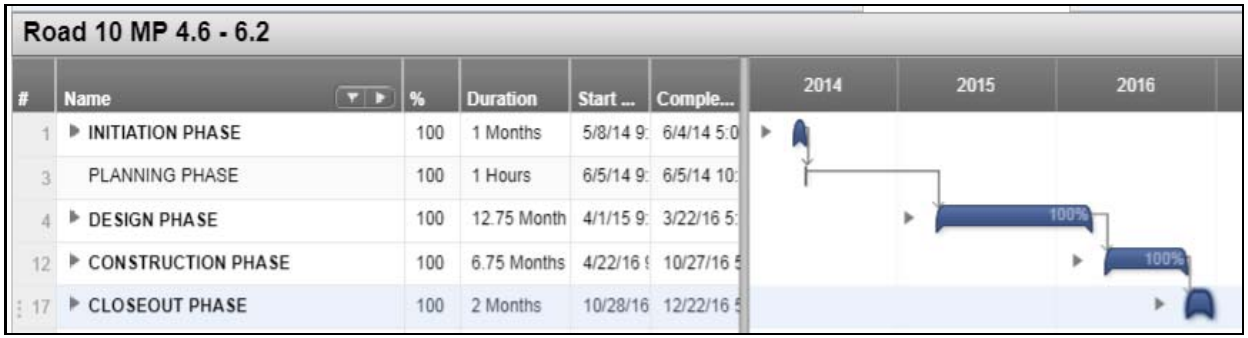
B. Schedule	
Initial mention:	May 2014
Initial planned comp:	December 2016
Current planned comp:	12/22/2016

C. Cost Plan	
Initial total cost est:	$1,280,000
FY 16-17 plan on 10/2016:	$658,000
FY 16-17 plan on 5/2017:	$1,094,000
Overall rate impact %:	0.059
Debt service, FY 16-17 est:	$44,707
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01825
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Bull Run Watershed

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$168,574	$168,574		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$642,560	$642,560		$0	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$15,353	$15,353		$0	$0	$0	$0	$0	$0	$0
Sum	$827,000	$826,486		$0	$0	$0	$0	$0	$0	$0



055 Closeout Warranty

Major Project Completed

W01825 Road 10MP 4.6 – 6.2

Road 10 MP 3.0 - 4.6

A. Scope	
Original Description / Purpose:	This project will grind existing pavement, restore road subgrade, pave, and stripe 1.6 miles of Road 10. The road will be brought up to current standards for width using fill and walls to add an average of three feet of width to the segment. Approximately nine culverts will be replaced with Aluminum Alloy Pipe.
Rationale: Plans/Studies & Specifics	This segment of Road 10 is part of the primary access road to the bureau's Headworks facility. It is used regularly by heavy vehicles delivering supplies and daily by PWB staff reporting to work. This primary road is in Poor condition and the road width does not meet the current design standard for this Class A road. This project is recommended by the 2012 Bull Run Roads Asset Management Plan and the Bull Run Watershed Road Repair Project Selection for fiscal years '14-'18.
Major changes since start:	Nov 2014: Fall Budget change as a new Major project. June 2015: Bids higher than expected so costs increased. Aug 2015: project timing being replanned for more favorable weather window. June 2017: actual final quantities higher than expected.
Other info / Coordination:	This project is adjacent to another road segment scheduled for work the previous FY. The nature of the work is similar; however treating these as separate projects allows us to more efficiently focus our design efforts and to provide more clarity moving forward regarding the project limits. These projects are delineated to correspond to previously defined road segments used in the evaluation of the road condition.

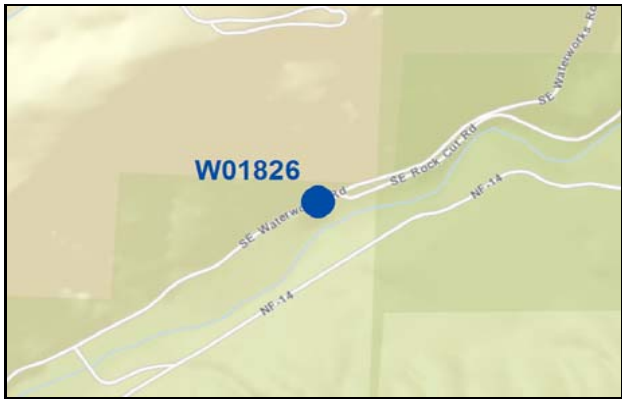
B. Schedule	
Initial mention:	May 2014
Initial planned comp:	February 2016
Current planned comp:	11/22/2016

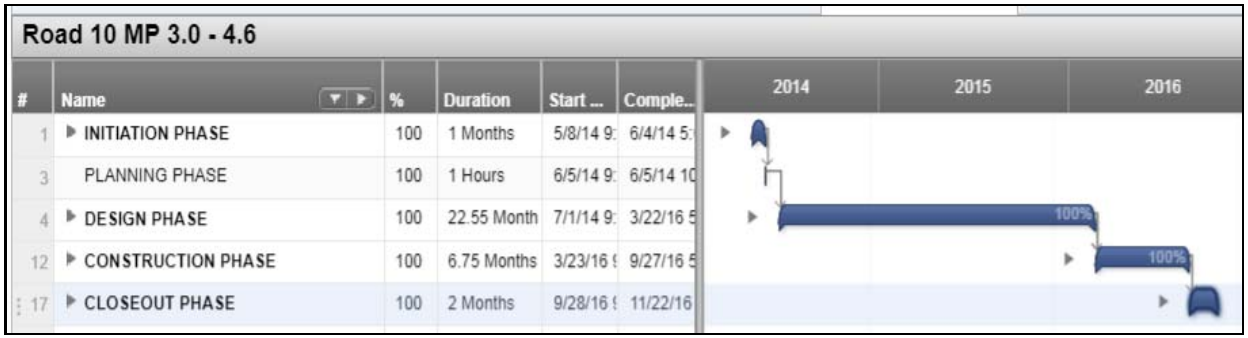
C. Cost Plan	
Initial total cost est:	$1,120,000
FY 16-17 plan on 10/2016:	$865,000
FY 16-17 plan on 5/2017:	$1,149,000
Overall rate impact %:	0.090
Debt service, FY 16-17 est:	$68,168
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01826
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Segment 10C on Road 10 in the watershed

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$185,139	$185,139		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$1,062,668	$1,062,668		$0	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$12,687	$12,687		$0	$0	$0	$0	$0	$0	$0
Sum	$1,261,000	$1,260,493		$0	$0	$0	$0	$0	$0	$0





055 Closeout Warranty

Major Project Completed

W01826 Road 10MP 3.0 – 4.6

Road 10R MP 28.77 - 31.85

A. Scope	
Original Description / Purpose:	This project will grind existing pavement, restore road subgrade, reconstruct turnouts, pave, and stripe 3.08 miles of Road 10. The road condition assessment indicates the average width of this road meets the design standard, however isolated widening may be required. Current condition ratings indicate one culvert will be replaced with Aluminum Alloy Pipe. Culvert inspection during design may indicate the need to replace more.
Rationale: Plans/Studies & Specifics	This segment of Road 10 provides access from Bull Run Lake to secondary egress from the watershed, should the main route be blocked. This segment is also an important piece of the tour route. This secondary road is at the low end of Fair condition, a remaining service life of approximately 5 years. The road meets the design width for this Class B segment however several failures have occurred in turnouts designed to accommodate passing vehicles. This project is recommended by the 2012 Bull Run Roads Asset Management Plan.
Major changes since start:	Aug 2016: transferred FY15-16 underspending to FY18-19. Aug 2017: construction moved to FY19-20.
Other info / Coordination:	

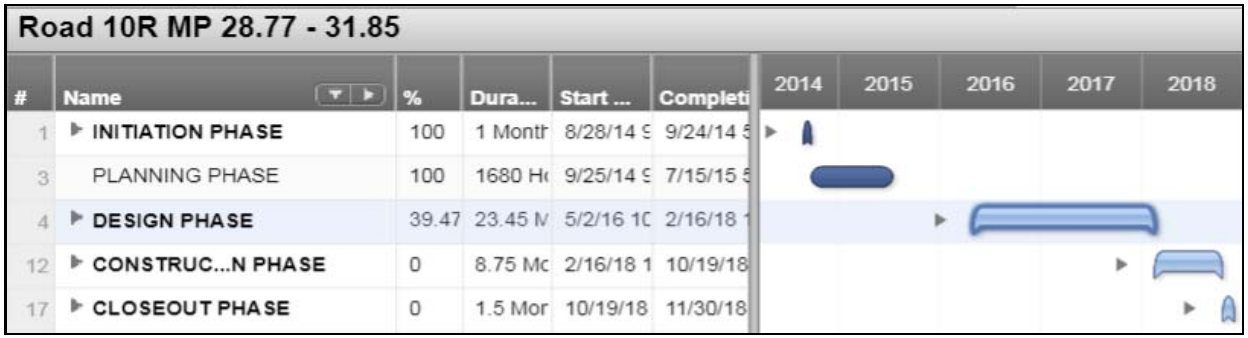
B. Schedule	
Initial mention:	August 2014
Initial planned comp:	January 2019
Current planned comp:	11/30/2018

C. Cost Plan	
Initial total cost est:	$2,100,000
FY 16-17 plan on 10/2016:	$200,000
FY 16-17 plan on 5/2017:	$200,000
Overall rate impact %:	0.150
Debt service, FY 16-17 est:	$113,524
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01874
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Road 10 in the watershed

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$219,007	$77,007		$142,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,870,000	$0		$0	$620,000	$1,250,000	$0	$0	$0	$0
Other (e.g. closeout)	$10,475	$10,475		$0	$0	$0	$0	$0	$0	$0
Sum	$2,100,000	$87,482		$142,000	$620,000	$1,250,000	$0	$0	$0	$0



030 Design Major Project Continuing

W01874 Road 10R MP 28.77 - 31.85

Road 10H MP 10.95 - 12.56

A. Scope	
Original Description / Purpose:	This project will grind existing pavement, restore road subgrade, pave, and stripe 1.61 miles of Road 10. The road condition assessment indicates the average width of this road meets the design standard, however isolated widening may be required. Current condition ratings indicate one culvert will be replaced with Aluminum Alloy Pipe. Culvert inspection during design may indicate a need to replace more.
Rationale: Plans/Studies & Specifics	This segment of Road 10 provides access from Headworks to secondary egress from the watershed, should the main route be blocked. This secondary road is at the low end of Fair and the road width does not meet the current design standard for this Class A road. This project is recommended by the 2012 Bull Run Roads Asset Management Plan.
Major changes since start:	12/2015: cost increase and schedule delay due to construction environment and weather considerations. 8/2017: replanned project to control costs using alternative construction method.
Other info / Coordination:	

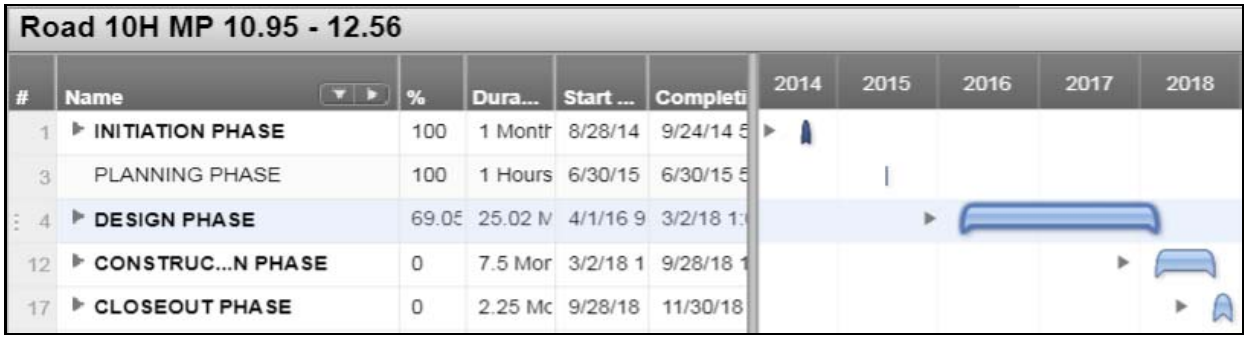
B. Schedule	
Initial mention:	August 2014
Initial planned comp:	December 2017
Current planned comp:	11/30/2018

C. Cost Plan	
Initial total cost est:	$822,000
FY 16-17 plan on 10/2016:	$161,000
FY 16-17 plan on 5/2017:	$161,000
Overall rate impact %:	0.072
Debt service, FY 16-17 est:	$54,383
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01875
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Road 10 in the watershed

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$163,531	$138,531		$25,000	$0	$0	$0	$0	$0	$0
Construction & Land	$831,000	$0		$35,000	$796,000	$0	$0	$0	$0	$0
Other (e.g. closeout)	$10,912	$10,912		$0	$0	$0	$0	$0	$0	$0
Sum	$1,006,000	$149,443		$60,000	$796,000	$0	$0	$0	$0	$0



030 Design

Major Project Continuing

W01875 Road 10H MP 10.95 - 12.56

Dam 1 Needle Valve Replacement

A. Scope	
Original Description / Purpose:	This project will replace the three existing needle valves, actuators and control panels at Dam 1 with new jet-flow gate valves or fixed cone valves.
Rationale: Plans/Studies & Specifics	The three (3) Dam 1 needle valves water release from Dam 1. The needle valves are 89 years old and were refurbished 24 years ago. They are antiquated, leak, and are difficult to open/close. In 2014, one of the needle valves had a closure failure and another is experiencing operational issues. Failure of needle valves can result in damage to the dam structure, loss of stored water, and loss of human life. The federal Bureau of Reclamation replaced all needle valves on federal dams due to safety issues and multiple losses of human life from failure of two needle valves. PWB planning recommended valve replacement 1989 and 2003. The project benefit cost ratio is 3.12.
Major changes since start:	8/16: permitting and hiring consultant added time.2/17: procurement delays. 8/17: further procurement delays and FY cost shifts.
Other info / Coordination:	Replacement of the needle valves will need to be coordinated with cold water transfers from Reservoir 1 to Reservoir 2 and is considered in the project schedule. Project cost estimate includes 50% contingency due to valve costs, potential constructability issues and long lead time.

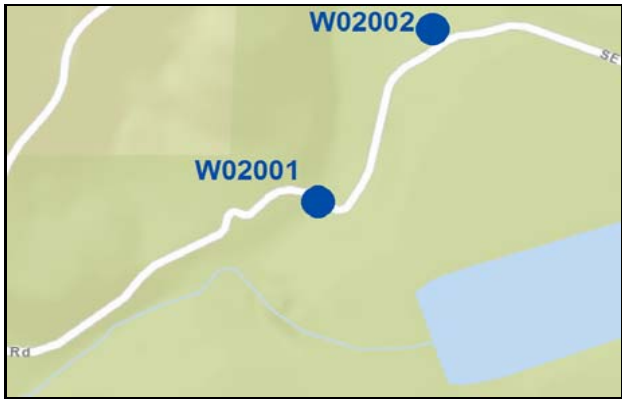
B. Schedule	
Initial mention:	August 2015
Initial planned comp:	October 2018
Current planned comp:	3/30/2020

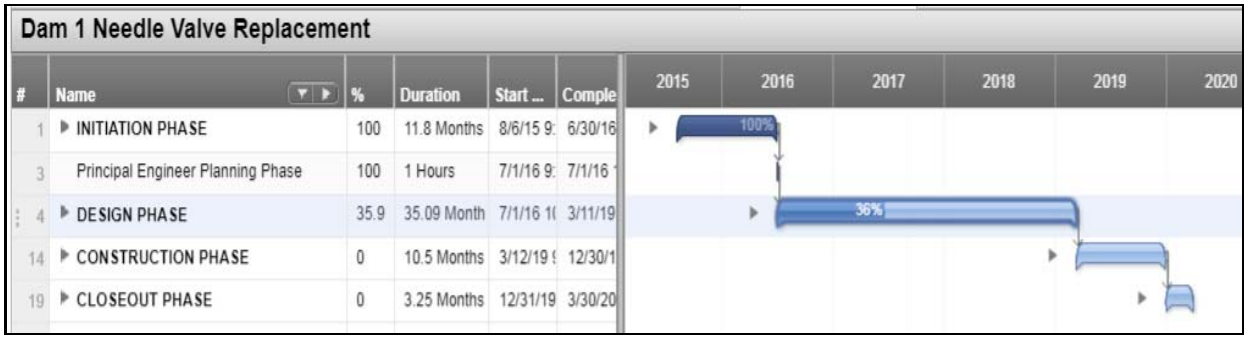
C. Cost Plan	
Initial total cost est:	$3,260,000
FY 16-17 plan on 10/2016:	$170,000
FY 16-17 plan on 5/2017:	$65,000
Overall rate impact %:	0.233
Debt service, FY 16-17 est:	$176,232
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02001
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Dam 1

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)	FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$421,622	$39,622	$358,000	$24,000	$0	$0	$0	$0	$0
Construction & Land	$2,838,000	$0	$0	$1,623,000	$1,215,000	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sum	$3,260,000	$39,622	$358,000	$1,647,000	$1,215,000	$0	$0	$0	$0





030 Design

Major Project Continuing

W02001 Dam 1 Needle Valve Replacement

Headworks Septic System Replacement

A. Scope	
Original Description / Purpose:	This project will replace the existing septic system (tank and drain field) at Headworks with a new subsurface sewage disposal system including a pump station, force main and drain field at Kaiser Park.
Rationale: Plans/Studies & Specifics	The 1959 septic system operates under a grandfather clause as it is located less than 100 ft from the Bull Run River and does not meet the current requirements of the Oregon Revised Statutes. Although identified as a low risk in the August 2014 Headworks Facilities Plan, the septic system has failed three times, most recently in September 2014. The Headworks Facilities Plan includes two projects that will require replacement of the existing septic system. Replacing the septic system now will prepare the Headworks site for the planned facilities, provide a system that is reliable and meets current ORS requirements, and eliminates a drain field too close to the river.
Major changes since start:	8/2017: construction bid higher than estimated.
Other info / Coordination:	The new subsurface sewage disposal system was previously designed under the 2011 design for Headworks facilities. The existing design will be used and modified as needed to meet any changes in code requirements. The new system is a pumped system and will require maintenance beyond the level of the existing gravity system.

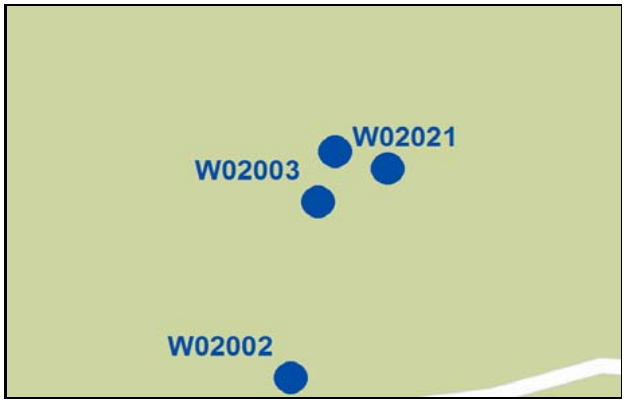
B. Schedule	
Initial mention:	August 2015
Initial planned comp:	February 2018
Current planned comp:	4/11/2018

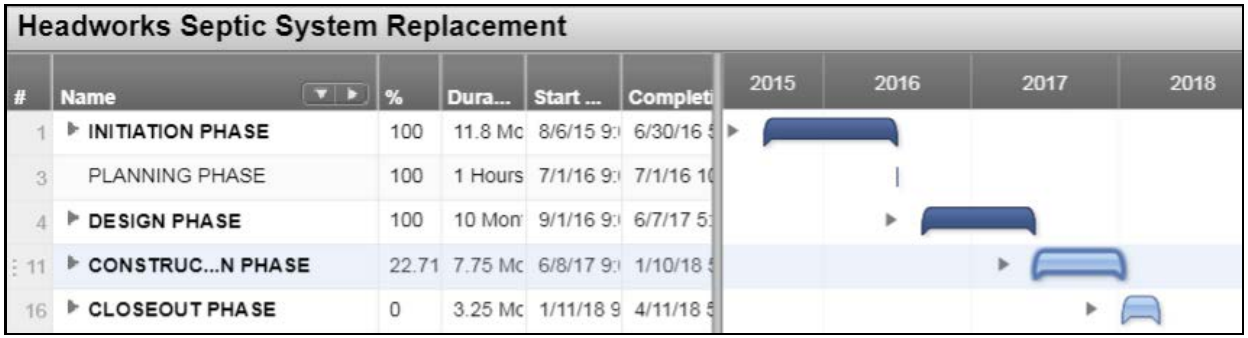
C. Cost Plan	
Initial total cost est:	$470,000
FY 16-17 plan on 10/2016:	$65,000
FY 16-17 plan on 5/2017:	$60,000
Overall rate impact %:	0.040
Debt service, FY 16-17 est:	$29,949
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02003
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Headworks

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$49,880	$49,880		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$504,000	$0		$504,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$554,000	$49,880		$504,000	$0	$0	$0	$0	$0	$0





040 Construction Major Project Continuing

W02003 Headworks Septic System Replacement

Microwave Communications System

A. Scope	
Original Description / Purpose:	This project will replace existing microwave communications equipment on 7 towers and facilities throughout the system with new equipment.
Rationale: Plans/Studies & Specifics	The PWB microwave equipment is obsolete and parts are no longer available from the manufacturer. In addition, BTS recommends changing the system in the Watershed from passive to active, which will increase the reliability and bandwidth. In the past year, there have been two equipment failures on the Council Crest tower, which have shut down the SCADA system and resulted in data loss. The microwave system is used by the 800 MHz radio system, the SCADA system, and for some VOIP and data transmissions.
Major changes since start:	Feb 2017: some scope shifted to next FY. Sept 2017: land use issue and small summer work window in watershed may extend construction into FY 18-19.
Other info / Coordination:	This project will be done for the Water Bureau by BTS under an MOU. PWB will own the equipment while BTS will install and maintain it.

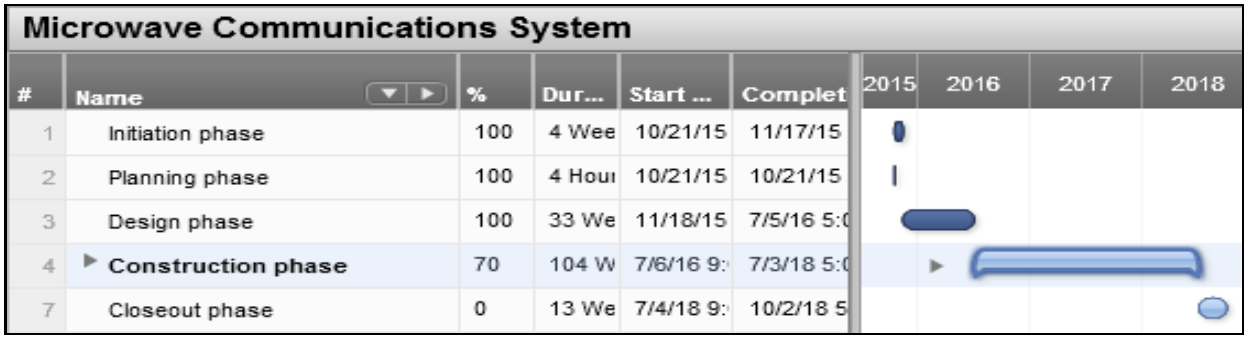
B. Schedule	
Initial mention:	October 2015
Initial planned comp:	June 2018
Current planned comp:	10/2/2018

C. Cost Plan	
Initial total cost est:	$2,214,000
FY 16-17 plan on 10/2016:	$300,000
FY 16-17 plan on 5/2017:	$300,000
Overall rate impact %:	0.158
Debt service, FY 16-17 est:	$119,687
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02021
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Various locations

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$74,222	$74,222		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$2,138,648	$275,648		$1,863,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$250	$250		$0	$0	$0	$0	$0	$0	$0
Sum	$2,214,000	$350,121		$1,863,000	$0	$0	$0	$0	$0	$0



040 Construction Major Project Continuing

W02021 Microwave Communications System

Groundwater Electrical Supply Improvements

A. Scope	
Original Description / Purpose:	This project designs and constructs a new high voltage transformer and other components to complete a double-ended electrical substation at the Groundwater Pump Station. It will also design and construct a new main breaker replacement and purchase selected spare components. March 2016: to reduce costs, we will replace the existing main transformer, main medium-voltage circuit breaker, and a few other components while eliminating the parallel transformer feature.
Rationale: Plans/Studies & Specifics	The 2000 PWB System Vulnerability Analysis and later reports identified a vulnerability for electrical failures. The risk cost of a transformer failure is mainly due to the time needed for transformer replacement. The 2009 "Portland Water Bureau Groundwater Pump Station 115kV/4160V Electrical Systems Vulnerability Reduction," proposed 3 alternatives. The benefit cost ratio on this project is over 1.1. Other major studies are the 2008 Groundwater Vulnerability to Flooding and Electrical Outages Project Concept Report and the 2008 Suggestions for Additional GW Vulnerability Reduction Assessment.
Major changes since start:	April 2011: construction pushed out to 2014-15 and to be authorized later. Sept 2012: design is moving faster than planned in FY12-13. Aug 2014: design delays increased cost. March 2015: storm water drainage permitting difficulties increased cost and delayed project. March 2016: replanned project to reduce cost but delayed construction. Feb 2017: consultant, staff and construction estimate increased.
Other info / Coordination:	

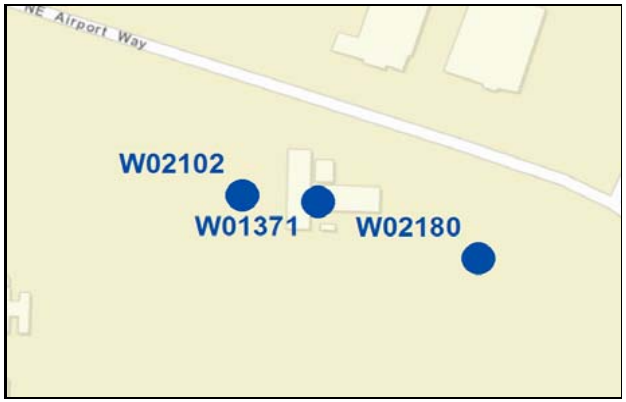
B. Schedule	
Initial mention:	9/1/2009
Initial planned comp:	June 2015
Current planned comp:	2/19/2019

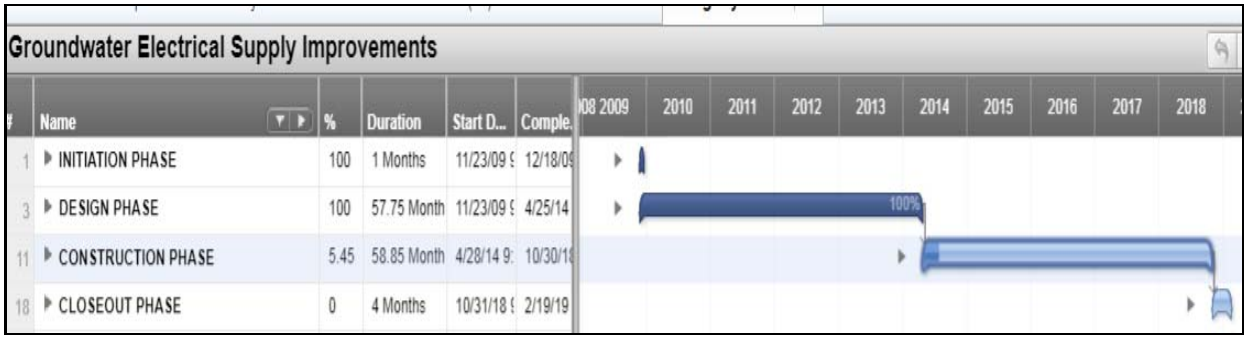
C. Cost Plan	
Initial total cost est:	$2,200,000
FY 16-17 plan on 10/2016:	$125,000
FY 16-17 plan on 5/2017:	$111,000
Overall rate impact %:	0.115
Debt service, FY 16-17 est:	$87,089
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01371
Program:	Supply
Subprogram:	Groundwater
Nearest Address:	NE Airport Way & NE 166th Ave

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$3,110	$3,110		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$580,703	$580,703		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$1,027,000	$0		$661,000	$366,000	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,611,000	$583,813		$661,000	$366,000	$0	$0	$0	$0	$0





040 Construction

Major Project Continuing

W01371 Groundwater Electrical Supply Improvements

Rockwood PUD Meter Vault

A. Scope	
Original Description / Purpose:	This project will design and construct a replacement meter vault. The new vault will be at the parking lane/ sidewalk area and contain a check valve. We also need piping to reconnect the supply main to the distribution main. Relocate electrical RTU cabinet per Gresham request.
Rationale: Plans/Studies & Specifics	A CLEM analysis completed in 2010 rated this project as being a "high risk" due to safety issues. Vault housing a wholesale meter with instrumentation is located in a high-traffic zone that requires the closure of multiple lanes to access. Due to width and height restrictions, the business case identifies risk exposure for injury to staff working in vault is high. Vault is old, nearing the end of useful life. Asset Management Plan recommended relocation out of traffic lanes to reduce risk.
Major changes since start:	A change management was approved on April 2011. Project was then re-assigned and put on hold until till funds became available. April 2014: project restarted. Aug 2014: project replanned with new schedule and cost estimate. Nov 2014: Fall Budget change as a new Major project. Aug 2015: schedule change due to scope change requested by City of Gresham. March 2016: delay due to easements related to new Gresham request. Feb 2017: easement issue requires further time.
Other info / Coordination:	

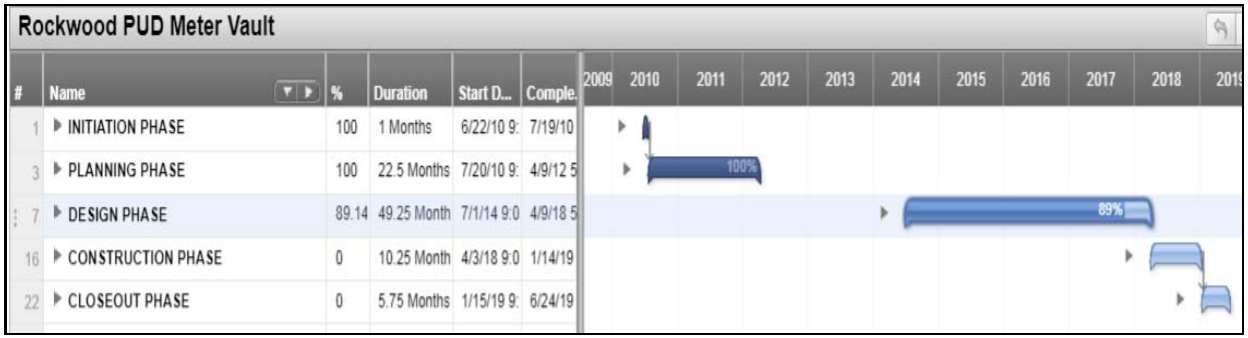
B. Schedule	
Initial mention:	6/22/2010
Initial planned comp:	October 2013
Current planned comp:	6/24/2019

C. Cost Plan	
Initial total cost est:	$530,000
FY 16-17 plan on 10/2016:	$5,000
FY 16-17 plan on 5/2017:	$15,000
Overall rate impact %:	0.040
Debt service, FY 16-17 est:	$30,381
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01489
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	SE 182nd Ave & SE Division St

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$137,372	$122,372		$10,000	$5,000	$0	$0	$0	$0	$0
Construction & Land	$423,938	$18,938		$0	$405,000	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$562,000	$141,310		$10,000	$410,000	$0	$0	$0	$0	$0



015 Design Major Project Continuing

W01489 Rockwood PUD Meter Vault

Gresham Conduit 2 Trestle Upgrades

A. Scope	
Original Description / Purpose:	This project will install 13 ring girders and scour protection on both the El Camino and Beaver Creek trestles.
Rationale: Plans/Studies & Specifics	This project is justified by the business case analysis completed as part of the 2015 Conduits Rehabilitation Plan. This project mitigates Conduit 2 failure risks due to seismic and flooding events which will improve PWB's supply resiliency due to natural disasters. The benefit cost ratio for the El Camino upgrades is 8.04 and the benefit cost ratio for the Beaver Creek upgrades is 6.25.
Major changes since start:	Feb 2017: increased cost due to higher bids and delay in contracting.
Other info / Coordination:	Ring girder installation is not common to PWB projects and cost contingency reflects our lack of experience. The known schedule risks include easements taking longer to procure, 404 permits, and timing of council approval. These risks could result in a one year due to in water work window constraints. Project will also need to coordinate with upcoming Conduit 2 condition assessment.

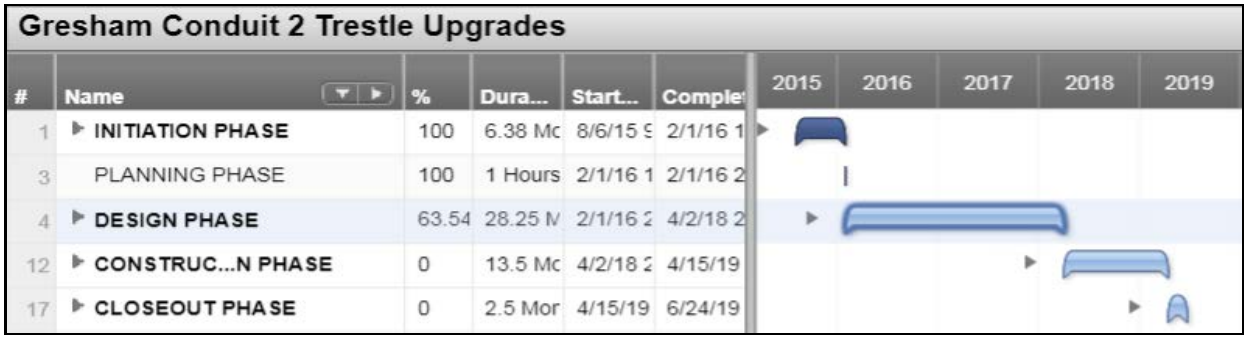
B. Schedule	
Initial mention:	August 2015
Initial planned comp:	December 2018
Current planned comp:	6/24/2019

C. Cost Plan	
Initial total cost est:	$1,150,000
FY 16-17 plan on 10/2016:	$150,000
FY 16-17 plan on 5/2017:	$147,000
Overall rate impact %:	0.093
Debt service, FY 16-17 est:	$70,601
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02006
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	Conduit 2's El Camino and Beaver Creek trestles

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$484,029	$124,029		$360,000	$0	$0	$0	$0	$0	$0
Construction & Land	$821,000	$0		$0	$821,000	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,306,000	$124,030		$360,000	$821,000	$0	$0	$0	$0	$0



030 Design

Major Project Continuing

W02006 Gresham Conduit 2 Trestle Upgrades

Conduit 3 Internal Inspection

A. Scope	
Original Description / Purpose:	This project will complete a condition assessment of 6 miles of sections of Conduit 3 and develop strategies for rehabilitation and replacement.
Rationale: Plans/Studies & Specifics	This is one of several projects that resulted from the PWB Conduit Rehabilitation Plan (January 2015). The plan recommended a detailed investigation of the condition of the three conduits in areas that are known to have prior repairs due to leaks, landslide potential and corrosive soil properties. PWB will use the findings from this project to identify possible capital improvement projects.
Major changes since start:	Feb 2017: consultant work and project time increased. Scope reduced from 8 to 6 miles due to time constraint. Increased analysis added to costs.
Other info / Coordination:	The project is capital if more than 50% of the assessed conduit needs to be replaced or removed.

B. Schedule	
Initial mention:	February 2016
Initial planned comp:	September 2017
Current planned comp:	4/24/2018

C. Cost Plan	
Initial total cost est:	$1,030,000
FY 16-17 plan on 10/2016:	$0
FY 16-17 plan on 5/2017:	$840,000
Overall rate impact %:	0.126
Debt service, FY 16-17 est:	$95,306
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02057
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	Conduit 3

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$258,845	$258,845		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$1,504,097	$687,097		$817,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,763,000	$945,942		$817,000	$0	$0	$0	$0	$0	$0

No Map for This Project

040 Construction

Major Project Continuing

W02057 Conduit 3 Internal Inspection

Conduit 2 Internal Inspection

A. Scope	
Original Description / Purpose:	This project will investigate approximately 8 total miles of smaller sections of Conduit 2 that are located in highly vulnerable areas, record findings from the investigation, identify limits of damaged sections, and propose strategies to address the identified defects.
Rationale: Plans/Studies & Specifics	This is one of several projects that resulted from the PWB Conduit Rehabilitation Plan (January 2015). The plan recommended a detailed investigation of the condition of the three conduits in areas that are known to have prior repairs due to leaks, landslide potential and corrosive soil properties. PWB will use the findings from this project to identify possible capital improvement projects.
Major changes since start:	
Other info / Coordination:	

B. Schedule	
Initial mention:	May 2017
Initial planned comp:	January 2019
Current planned comp:	12/21/2018

C. Cost Plan	
Initial total cost est:	$1,788,000
FY 16-17 plan on 10/2016:	$0
FY 16-17 plan on 5/2017:	$0
Overall rate impact %:	0.128
Debt service, FY 16-17 est:	$96,658
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02209
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	Conduit 2

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$30,618	$5,618		$25,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,757,000	$0		$1,653,000	$104,000	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,788,000	$5,618		$1,678,000	$104,000	$0	$0	$0	$0	$0

No Map for This Project

030 Design

Major Project Continuing

w02209 Conduit 2 Internal Inspection

Washington Park Reservoir 3

A. Scope	
Original Description / Purpose:	The project planned, designed and constructed a new buried reservoir to replace open Reservoir 3. This project was one solution toward compliance with LT2 replacement of the open reservoirs. It is assumed that Reservoir 4 will be used as the overflow detention, dechlorination and stormwater structure. We envision that the buried reservoir would be topped with a reflecting pond and historical features would be protected as much as possible.
Rationale: Plans/Studies & Specifics	This project is critical and is identified in the 3/27/09 EPA approved LT2 Storage Plan. Published studies include: Open Distribution Reservoir Study, April 1976; Open Reservoir Study Phase I Summary Report, January 2002 Update; and the Open Reservoir Study Phase II Planning Summary Report. According to the schedule accepted by EPA, the buried Reservoir 3 must be operational and Reservoir 4 must be disconnected by December 2020.
Major changes since start:	8/10: planning phase and procurement delayed completion to 3/2015. 2/11: further procurement delay. 5/12: OHA denied PWB request for LT2 compliance delay and told PWB to meet 3/27/2009 schedule. 2012: Basis of Design Report completed, new estimate for Reservoir 3 only is $67M. Schedule and cost adjusted. 6/13: Increased total due to landslide mitigation and higher contingency as well as multiyear cost plan. 3/15: cost plan shift no change in total. 8/15: cost and schedule change due to geotech, structural and historic commission. 3/16: cost change as part of finalizing design. 8/16: updated FY cost plan. 8/17: updated FY cost plan.
Other info / Coordination:	This project is also known as Washington Park Reservoir Improvements. Reservoir 3 is expected to be buried with some form of reflecting pool on top which will increase long-term maintenance costs. Reservoir 4 will remain as an overflow and stormwater basin. Historical features are being preserved. Other improvements include piping revisions and site work.

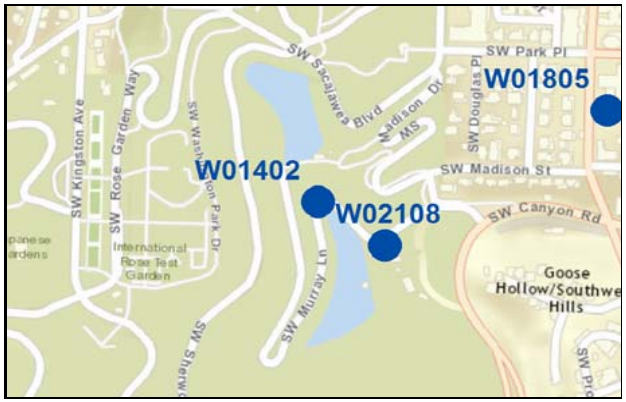
B. Schedule	
Initial mention:	3/27/2009
Initial planned comp:	December 2020
Current planned comp:	3/29/2024

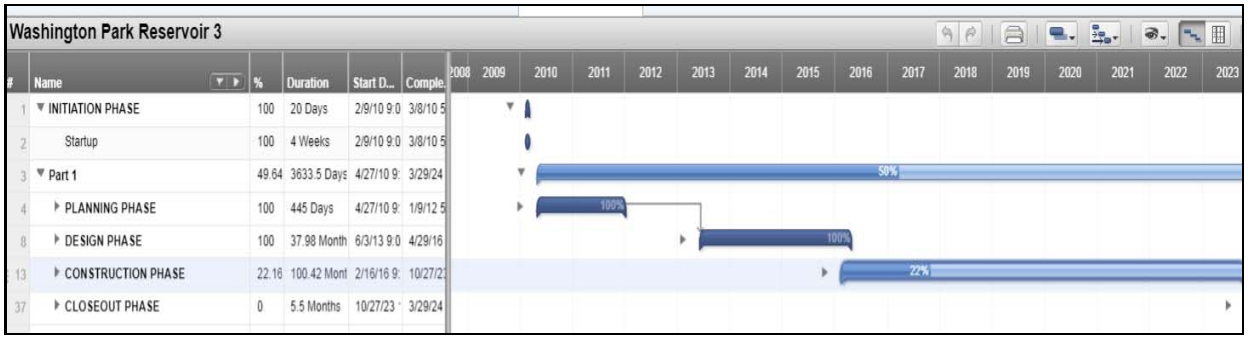
C. Cost Plan	
Initial total cost est:	$61,132,686
FY 16-17 plan on 10/2016:	$27,400,000
FY 16-17 plan on 5/2017:	$26,597,000
Overall rate impact %:	13.571
Debt service, FY 16-17 est:	$10,271,213
Lifecycle cost est:	Likely increase

D. Identification	
SAP #:	W01402
Program:	Transmission & Terminal Storage
Subprogram:	Terminal Reservoirs
Nearest Address:	SW Jefferson Rd & SW Murray St

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$785,776	$785,776		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$18,950,866	$18,950,866		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$169,064,300	$19,681,024		$37,638,350	$41,555,021	$26,100,000	$15,500,000	$6,000,000	$10,900,000	$11,689,905
Other (e.g. closeout)	$1,199,059	$1,199,059		$0	$0	$0	$0	$0	$0	$0
Sum	$190,000,000	$40,616,724		$37,638,350	$41,555,021	$26,100,000	$15,500,000	$6,000,000	$10,900,000	$11,689,905





040 Construction Major Project Continuing

W01402 Washington Park Reservoir 3

Tabor Reservoir Adjustments

A. Scope	
Original Description / Purpose:	This project provides adjustments to piping, structures and other features at Mt. Tabor in order to move storage elsewhere and physically disconnect the open reservoirs from the public water system for compliance with LT2. Project will be done in a manner to protect the existing historical structures.
Rationale: Plans/Studies & Specifics	This project is critical and needed because of LT2 elimination of open reservoirs and is a project identified in the 3/27/09 EPA approved LT2 Storage Plan. This project must be complete in order to disconnect Reservoirs #1, #5 and #6 from the public water system.
Major changes since start:	#1 June 2010: reduced scope and costs from $42M to $5M. # 2 Sept 2011: Project on hold. #3 May 2012: OHA denied request to delay LT2 compliance and told to meet 3/27/2009 schedule. #4 Sept 2012: adjust fiscal years funding. #5 Fall 2012: Split project into 2 projects for ROW vs onsite work. #6 April 2013: scope, schedule and budget increase. #7 June 2013: changed project total and cash flow. # 8 Aug 2014: permitting, scope and outreach changes increased costs. 3/15: add scope, duration, cost and increased contingency per land use conditional approval.
Other info / Coordination:	Lifecycle cost changes depend on what happens to the open reservoirs after they are disconnected from the public water system.

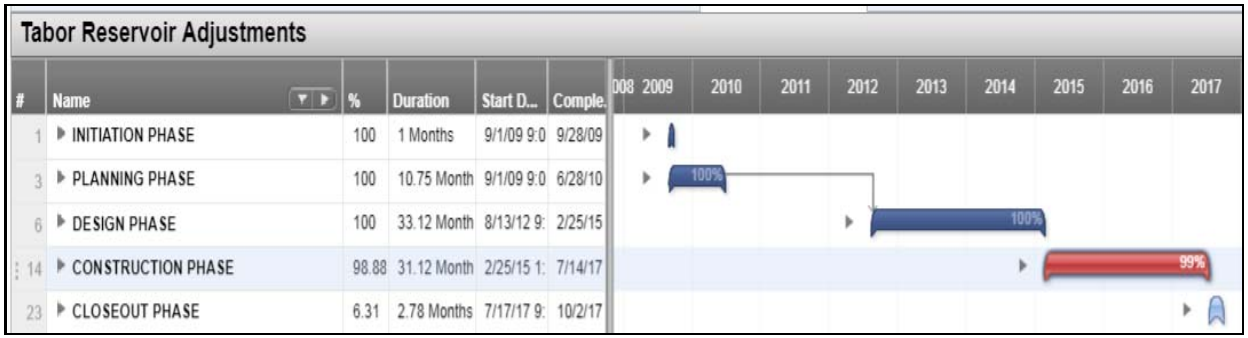
B. Schedule	
Initial mention:	3/27/2009
Initial planned comp:	June 2016
Current planned comp:	10/2/2017

C. Cost Plan	
Initial total cost est:	$6,406,994
FY 16-17 plan on 10/2016:	$1,800,000
FY 16-17 plan on 5/2017:	$1,800,000
Overall rate impact %:	0.501
Debt service, FY 16-17 est:	$379,062
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01524
Program:	Transmission & Terminal Storage
Subprogram:	Terminal Reservoirs
Nearest Address:	Tabor Reservoir

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$53,627	$53,627		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$1,981,665	$1,981,665		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$4,976,492	$4,817,492		$159,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$7,012,000	$6,852,785		$159,000	$0	$0	$0	$0	$0	$0



040 Construction

Major Project Continuing

W01524 Tabor Reservoir Adjustments

Headworks Generator Improvements - cancelled

A. Scope	
Original Description / Purpose:	This project will improve Headworks' emergency power supply system by installing a new emergency generator, fuel storage tank, and associated site electrical components as recommended by the Headworks Facilities Plan.
Rationale: Plans/Studies & Specifics	The Headworks Facilities Plan recommended a new emergency generator, switchgear and site electrical panels to support current electrical loads. As a result, site personnel are at an increased health and safety risk. The Plan identified 14 projects to reduce risks posed to the Portland Water Bureau's water treatment and supply system. Of the 14, improvements to the Headworks emergency generator, switchgear and site electrical panels would provide the greatest reduction in risk by mitigating 3 occurrences of high risk, and is thus the first recommended project.
Major changes since start:	Nov 2014: Fall Budget change as a new Major project. March 2016: project being replanned; cost and schedule changes ahead to reduce the project. May 2017: project on hold for replanning Aug 2017: project scope no longer needed. Project cancelled due to Council decision on Treatment.
Other info / Coordination:	

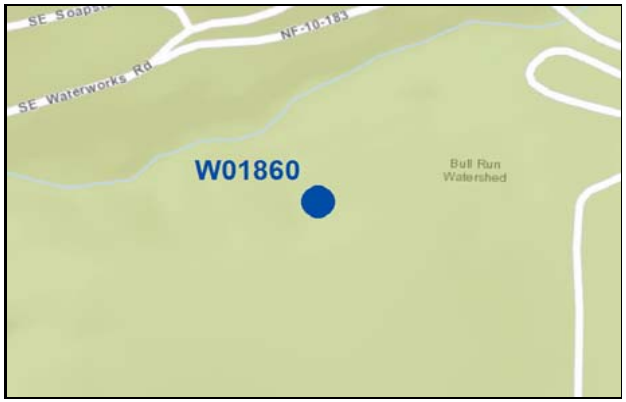
B. Schedule	
Initial mention:	July 2014
Initial planned comp:	November 2018
Current planned comp:	6/30/2017

C. Cost Plan	
Initial total cost est:	$1,670,000
FY 16-17 plan on 10/2016:	$300,000
FY 16-17 plan on 5/2017:	$300,000
Overall rate impact %:	0.035
Debt service, FY 16-17 est:	$26,489
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01860
Program:	Treatment
Subprogram:	Treatment
Nearest Address:	Headworks near Powerhouse Rd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$35,643	$35,643		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$453,819	$453,819		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$0	$0		$0	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$490,000	$489,461		$0	$0	$0	$0	$0	$0	$0



059 Cancelled

Major Project Cancelled

W01860 Headworks Generator Improvements - cancelled

Chlorine Scrubber Replacement - cancelled

A. Scope	
Original Description / Purpose:	This project will replace the existing liquid media chlorine scrubber with a new dry media chlorine scrubber at the Headworks facility.
Rationale: Plans/Studies & Specifics	The existing chlorine scrubber is at the end of its useful life, requires frequent maintenance, poses safety hazards. The Headworks Facilities Plan has given the the project a High CLEM rating. The new dry scrubber unit reduces maintenance costs and considerably lowers the risk of a safety issue. The business case recommended replacement with a benefit to cost ratio of 1.1.
Major changes since start:	Aug 2017: project is being reconsidered in light of Council decision on Treatment. Sept 2017: new scrubber cancelled.
Other info / Coordination:	No material change in maintenance costs. This project contingency is less than 10% as we have recent cost estimates for the equipment and installation is primarily above ground with minimal risks during construction.

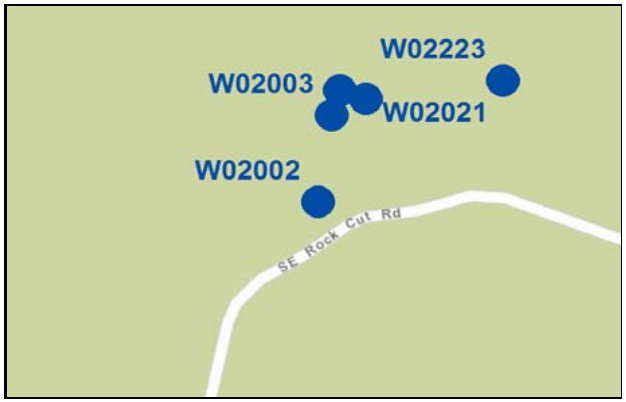
B. Schedule	
Initial mention:	July 2015
Initial planned comp:	June 2018
Current planned comp:	12/1/2017

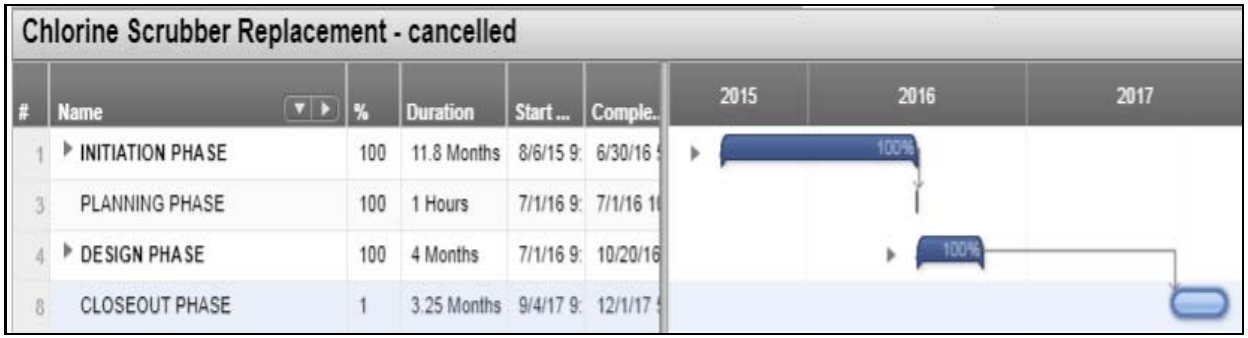
C. Cost Plan	
Initial total cost est:	$485,000
FY 16-17 plan on 10/2016:	$85,000
FY 16-17 plan on 5/2017:	$85,000
Overall rate impact %:	0.005
Debt service, FY 16-17 est:	$3,838
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02002
Program:	Treatment
Subprogram:	Treatment
Nearest Address:	Headworks

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2017)		FY 17-18 (FY0 Plan)	FY 18-19 (FY1 Plan)	FY 19-20 (FY2 Plan)	FY 20-21 (FY3 Plan)	FY 21-22 (FY4 Plan)	FY 22-23 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$60,345	$60,345		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$10,000	$0		$10,000	$0	$0	$0	$0	$0	$0
Other (e.g. closeout)	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$71,000	$60,345		$10,000	$0	$0	$0	$0	$0	$0





059 Cancelled

Major Project Cancelled

W02002 Chlorine Scrubber Replacement - cancelled

This CIP Annual Report for Fiscal Year 2016-17 is available on the Portland Water Bureau website:

https://www.portlandoregon.gov/water/cipar